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UNIVERSITY OF ALBERTA

RELATIONSHIP BETWEEN HIV ANTIBODY STATUS AND THE SEX PRACTICES OF GAY AND BISEXUAL MEN

BY

AGNES HONISH

A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE
OF MASTER OF NURSING

FACULTY OF NURSING

EDMONTON, ALBERTA

SPRING, 1991

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FACULTY OF GRADUATE STUDIES AND RESEARCH

THE UNDERSIGNED CERTIFY THAT THEY HAVE READ, AND RECOMMEND TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH FOR ACCEPTANCE, A THESIS ENTITLED RELATIONSHIP BETWEEN HIV ANTIBODY STATUS AND THE SEX PRACTICES OF GAY AND BISEXUAL MEN. SUBMITTED BY AGNES HONISH IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF NURSING.

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ABSTRACT

The purpose of this study was to determine if information about human immunodeficiency virus (HIV) antibody status changed the sex practices of gay and bisexual men in Edmonton, Alberta.

Two hundred and five gay and bisexual men were surveyed with an anonymous self-administered questionnaire. Subjects were recruited into the study from gay voluntary organizations, recreational facilities, social events, gay bars, church groups, physicians' practices and health care treatment centres. Additional subjects were invited to participate in the study by newspaper advertisements in gay publications, posters and the "snowball" method. The response rate from all methods was 41%.

Returned questionnaires were categorized according to information about HIV antibody status resulting in 46 sero-positive subjects, 82 sero-negative subjects and 77 subjects who had never been tested. More than half (57.1%) of the sample reported their sex partners as "one night stands", 26.8% had a regular partner and 16.1% had a regular partner but had sex outside the relationship.

Demographic differences ($p<.05$) were reported among respondents HIV sero-positive, HIV sero-negative and not tested. Subjects HIV antibody positive reported fewer years of education, an occupation of lower status and a higher rate of unemployment. Two of 13 sex practices were significantly different ($p<.05$) among the three groups. Subjects HIV sero-positive practised mutual masturbation less frequently and shared sex toys more often than subjects HIV sero-negative or not tested.

Although the safer sex practices of this sample of gay and bisexual men have increased, a great number continue to engage in high risk behaviour. Approximately half (48.5%) of the subjects continued to practice unprotected receptive anal intercourse. However, 32 (15.6%) of the sample had abstained from sex for the six months previous to the study.

Approximately half of the subjects who had an HIV antibody test reported inadequate pre and posttest counselling. Twenty-one (16.4%) of the 128 subjects who were aware of their HIV sero-status reported discriminatory practices as a result of being tested.

The implications of this study for the gay community and health care providers indicate a need for detailed educational programs and effective counselling techniques specific to the sexual behaviour of gay and bisexual men.

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CHAPTER I

INTRODUCTION AND STATEMENT OF THE PROBLEM

The acquired immune deficiency syndrome (AIDS) is caused by a blood borne virus known as the HIV. Certain forms of male to male sexual contact represent the mode of acquisition of HIV accounting for 80.7% of the 3,323 adult cases of AIDS reported in Canada (Federal Centre for AIDS, 1990) and for 87.2% of 250 cases reported in the province of Alberta (Alberta Community & Occupational Health, Communicable Disease Control & Epidemiology , 1990). Because there is neither a vaccine nor cure for HIV infection, prevention depends mainly on the safer sex practices outlined by both Alberta Health (1988) and the Canadian AIDS Society (1988). Voluntary HIV antibody testing of people at increased risk is advocated (Alberta Community & Occupational Health, 1988b; Health & Welfare Canada, 1989; Royal Society of Canada, 1988). Use of the HIV antibody screening test in reducing the transmission of the HIV is based on the assumption that notification of HIV antibody status, together with counselling, will increase compliance with safer sex practices. The influence of Alberta's voluntary HIV testing program on sex practices remains unclear. Previous research pertaining to information about HIV antibody status indicates that gay men who are HIV antibody positive change their sex practices to a greater degree of safety when compared with those who are HIV antibody negative or of unknown serological status. Because of the inconsistent findings in earlier studies, this study focussed on the relationship between information about HIV antibody status and the sex practices of gay and bisexual men in Edmonton, Alberta.

Information about HIV antibody status, either positive, negative or unknown, has been related to changes toward safer sex practices in a number of studies, although there are reported inconsistencies, and the magnitude of change has sometimes been small (Fox, Odaka, Brookmeyer & Polk, 1987; Frazer, McCamish, Hay & North, 1988; McCusker et al., 1988; Schechter et al., 1988; van Griensven et al., 1988). Safer sex practices of gay men in these studies were measured primarily by reported changes in the number of partners and the practice of protected or unprotected receptive and insertive anal intercourse. Other sexual practices measured were: hugging, kissing, body rubbing, mutual masturbation, orogenital contact, anilingus and fisting.

HIV sero-positive men. HIV infected gay men consistently reported, with the greatest frequency, the wearing of condoms during anal intercourse (Fox, Odaka, Brookmeyer & Polk, 1987; Frazer, McCamish, Hay & North, 1988; McCusker et al., 1988; Schechter et al., 1988; van Griensven et al., 1988). Gay men who knew they were HIV sero-positive also demonstrated the greatest reduction in their number of partners (van Griensven et al., 1988). However, other studies support a trend towards a reduction in the number of partners but do not attribute this change to information about HIV sero-status (Fox, Odaka, Brookmeyer & Polk, 1987; Frazer, McCamish, Hay & North, 1988; McCusker et al., 1988; Schechter et at., 1988).

HIV sero-negative men. Some researchers reported that gay men who were aware of their HIV negative sero-status most frequently practiced receptive anal intercourse without the use of condoms, a high risk activity for acquiring HIV infection, as compared with those gay men whose sero-status was unknown or positive (Fox, Odaka, Brookmeyer & Polk, 1987; Schechter et al., 1988). Other researchers reported no change in receptive anal intercourse practices following awareness of a negative HIV antibody test (Frazer, McCamish, Hay & North, 1988; McCusker et al., 1988).

Men unaware of their HIV sero-status. There are reported inconsistencies in studies assessing the sex practices of gay men who have no information about their HIV sero-status. Fox, Odaka, Brookmeyer and Polk (1988) reported that gays who were not aware of their HIV sero-status practiced safer sex more frequently than those who were aware of an HIV negative result (Frazer, McCamish, Hay & North, 1988; McCusker et al., 1988). Valdiserri et al. (1988) reported similar condom use rates between sero-negatives and those who did not know their HIV sero-status. However, all of the studies cited tested all subjects but only gave the test result to men who accepted the invitation to be informed of their HIV antibody status. Men who declined this invitation were labelled as not tested. Persons who are motivated to participate in a study and consent to an HIV antibody test may be different from those who do not.

Demographic differences have been reported in those who choose not to be informed of their HIV antibody status. Research results from one study indicted that gay men unaware of their HIV sero-status were more likely to be non-white, younger and less educated than those gay men aware of their HIV sero-status (Lyter, Valdiserri, Kingsley, Amoroso & Rinaldo, 1987), but another study reported that those gay men unaware of test results were significantly more likely to have a college degree (Fox, Odaka, Brookmeyer & Polk, 1987). Because the results of the studies are inconsistent, age, race and level of education will be used in the data collection instrument.

In summary, the literature reviewed suggests that information about HIV sero-status has an effect on sex practices, particularly when the HIV antibody status is positive (Fox, Odaka, Brookmeyer & Polk, 1987; Frazer, McCamish, Hay & North, 1988; McCusker et al., 1988; Schechter et al., 1988; van Griensven et al., 1988). Gay men who knew that their HIV antibody status was negative reported the smallest reduction in unsafe sex practices. This finding may indicate that those who test negative infer some form of protection which may act as a disincentive to change to safer sex practices. However, these researchers also reported that a significant number of gay men practiced unsafe sex regardless of their HIV antibody status.

The five studies cited above focussing on the relationship between awareness of HIV antibody status and sexual practices are geographically widely dispersed: Australia (1), Canada (1), the Netherlands (1) and the United States (2). Proposing a study in Edmonton for the purpose of exploring the relationship between information about HIV antibody status and sex practices may yield interesting results that could be used for comparison.

The sero-prevalence of HIV infection in the Edmonton population is unknown as are the perceptions held by gay and bisexual men regarding the perceived risk of contracting AIDS in this city. Change toward safer sex is least evident in areas where the prevalence of HIV infection is low (Frazer et al., 1988; Jones et al., 1987). Since 250 cases of AIDS have been reported in Alberta between 1983 and 1990, it is presumed that the prevalence of HIV infection in Edmonton is low (Alberta Community & Occupational Health, Communicable Disease Control & Epidemiology, 1990).

Unsafe sex practices in the gay population such as anal intercourse without a condom represent the highest risk activity for acquiring AIDS and therefore prevention strategies aimed at the sex practices of this population are necessary. The relationship between information about HIV antibody status and the sex practices of gay and bisexual men has not been studied in Edmonton or in Alberta. The results of the study may provide a basis for future prevention strategies aimed at promoting safer sex and thus reducing the transmission of the HIV among gay and bisexual men in this city.

Purpose

The primary purpose of this study was to answer the question: Did information about HIV antibody status change the sex practices of gay and bisexual men in Edmonton, Alberta? In addition, eight sub-questions were proposed:

1) What proportion of gay and bisexual men in the study sample practiced one or more of the 13 sexual activities detailed by the survey instrument?
2) If information about HIV antibody status has changed the sex practices of gay and bisexual men, what was the direction of change, that is, has the specific sex activity increased or decreased?
3) What was the relationship between sex practices and extraneous variables, for example, alcohol and drug use?
4) What was the level of sex activity of gay and bisexual men as indicated by the number of lifetime sex partners and the number of different partners in the last six months? If subjects did not have sex in the last six months, was it embarrassing to talk about and did it affect their personal happiness?
5) What was the effect of reporting regular or casual partners on their sex practices and did subjects participate in group sex?
6) What proportion of subjects who reported having had an HIV antibody test received pre and posttest counselling and if more information was needed, specifically what information was required?
7) Were subjects discriminated against as a result of their HIV antibody status and if so

how?

8) What did subjects do when they learned of their HIV antibody status?

Definition of Terms

Information about HIV antibody status: a self-reported awareness of the results of a blood test to verify the clinical reported presence or absence of HIV antibodies in a person's system as elicited by a structured questionnaire.

Sex practices: a self-reported state of sexual activity as elicited by a structured questionnaire, where a man becomes involved with his partner in an attempt to achieve and satiate sexual arousal.

Extraneous variables: selected variables that may interfere with the relationship between information about HIV antibody status and sex practices. The variables measured were (a) general knowledge of AIDS, (b) safer sex knowledge, (c) perception of risk or chance of contracting HIV infection in Edmonton, (d) having a friend or lover die of AIDS, (e) having sex under the influence of alcohol or drugs, and (e) demographic information including age, race, income, education, employment and occupation.

A further list of terms utilized in this study is contained in the Glossary in Appendix A.

CHAPTER II

HIV ANTIBODY TESTING AND SEX PRACTICES: A REVIEW OF THE LITERATURE

In order to discover substantive issues in the field relating to the research question, a review of the literature utilized the search terms HIV antibody test/HIV sero-positivity, sex practices, homosexuality and included an expanded search for supportive literature on these topics. Because the first case of AIDS in Canada was reported in 1982 (National Health & Welfare, 1986), and the HIV test was first available for clinical use in Alberta in November of 1985 (R. Devine, Director of Virology, Provincial Laboratory, Edmonton, personal Communication, Jan. 31, 1989), the literature search was conducted from 1982 to 1990. Research findings are organized and presented under the following headings: the epidemic of HIV infection, impact of HIV antibody testing on sex practices, methodological issues and extraneous variables.

The Epidemic of HIV Infection

HIV is transmitted primarily by sexual contact, shared contaminated needles, transfusion of infected blood or blood products or from mother to infant via the placenta. Live virus has been isolated from several body fluids including blood, semen, vaginal secretions, tears and saliva (Bakerman, 1988), but concentrations sufficient to permit transmission are attained only in blood and genital fluids. Isolation of HIV from other body fluids indicates transmission is theoretically possible, but has not been documented to date (Canadian AIDS Society, 1988). For example, in a study of 90 healthy subjects who collected saliva at three events: brushing teeth, eating meals and passionate kissing, it was determined that the percentage of subjects with blood in saliva increased significantly after brushing teeth and passionate kissing. The authors conclude

"...passionate kissing cannot be considered protective sex for transmission of human immunodeficiency virus infection" (Piazza et al., 1989, p. 245). Therefore, when assessing risk of HIV transmission, a distinction between theoretical and documented risk must be made.

It is the risk activity, not membership in a risk group, that permits HIV infection. While unprotected receptive anal intercourse was shown to be independently associated with increased risk of acquiring HIV infection in a study of 2,507 gay men in the United States (Kingsley et al., 1987), anal intercourse is not limited to gay men. For example, in a study of 95 women and their infected male sexual partners, 29 (31%) practiced anal intercourse (Padian et al., 1987). The women in this study were 2.3 times more likely to acquire HIV infection when compared with women who engaged in oral or vaginal intercourse. The proportion of women practicing anal intercourse in this study may not be representative of the heterosexual population, as 57% of male partners were bisexual.

AIDS in North America continues to be a disease primarily affecting gay and bisexual men (Centres of Disease Control, 1989; Federal Centre for AIDS, 1989). The risk factors reported for 250 cases of AIDS in Alberta for the period 1983 to 1990 are: homosexual (87.2%), blood/blood products (6.4%), heterosexual (2.8%), drug misuse (1.2%), paediatric (0.8%) and unknown/endemic (1.6%) (Alberta Community & Occupational Health, Communicable Disease Control & Epidemiology, 1990). Most of Alberta's AIDS cases (80%) occur in people between 25 and 55 years of age. Adult females represent 4% of total cases. Therefore, the person at highest risk for acquiring AIDS in Alberta is a young, gay male. Although behavioural changes toward safer sex in gay and bisexual men have been dramatic since the AIDS epidemic was first identified (Becker & Joseph, 1988; Bye, 1987; Centres for Disease Control, 1985), there are still individuals who place themselves at risk for acquiring HIV infection.

Defining the Homosexual Population. Heterosexual and homosexual behaviours are often described on a continuum. Bell and Weinberg (1978) reported homosexuality-heterosexuality on a scale of 0 (exclusively homosexual) to 6 (exclusively heterosexual). There was no sharp distinction between homosexuality and heterosexuality. The incidence of homosexuality is assessed both in the general population and in study samples directed at recruiting homosexual men.

What is the incidence of homosexuality in the general population? A common convention based on Kinsey (1948) and cited as confirmed by Ruse (1988) is that approximately 10% of males are homosexual. Kinsey reported that 13% of men had been more homosexual than heterosexual for at least three years between the ages of 16 and 55 and that 4% had been exclusively homosexual since adolescence. The Centres for Disease Control (1988b) reported this may be an overestimate. A National Study of 504 randomly selected men reported 2.8% of partners were exclusively male. A large U.S. study of 25,000 subjects is currently being conducted to describe sexual practices in the population (Booth, 1988). In Edmonton, calculations based on 1987 Election Office Statistics (F. Guenther, Election & Census Officer, City of Edmonton, personal communication, Jan. 31, 1989) and a 10% incidence of homosexuality, indicate that an estimated 20,484 of 204,840 men between the ages of 15 and 65 would be more or less exclusively homosexual. Again using the data from Kinsey (1948) which estimated a 17% incidence of bisexuality and the 1987 Election Office Statistics, approximately 34,822 males in Edmonton between the ages of 15 and 65 would have both heterosexual and homosexual experiences.

A recent study of 500 randomly selected men who attended the Edmonton Sexually Transmitted Disease (STD) Clinic offers some support for the Kinsey data. Twenty-two (4.4%) of subjects were reported as exclusively homosexual and 53 (10.6%) of subjects were reported as bisexual (B. Romanowski, Director, STD Clinic, January 5, 1990). These proportions should be interpreted with caution because men that attend the STD Clinic may not be representative of the population of men in Edmonton.

Studies aimed at recruiting gay men report a higher incidence of homosexuality. A study of homosexual men in the San Francisco Bay area described approximately three-quarters of the subjects reported themselves as exclusively homosexual (Bell & Weinberg, 1978). A recent Vancouver study of gay men (Marchand, 1989) described that 92% of subjects reported themselves as gay in response to a question that asked the subject to rate himself as gay, bisexual or straight. Because these studies were not based on random sampling, the study sample may not have been a true representation of the gay population.

Research findings from other parts of the world may not be generalizable to Canadian homosexual practices. For example, a Toronto study of 603 gay and bisexual men determined the frequency of sexual contact was significantly lower than numbers of partners reported in England or U.S. urban centres (Soskolne, Coates & Sears, 1986). In a study of 49 Edmonton homosexuals, the most commonly reported sexual practices were fellatio, anal penetration and masturbation (Ashman, 1976). Approximately half of the subjects in the Edmonton study did not engage in anal intercourse in a pre-AIDS era.

Risk Factors for HIV Infection in Gay Men. Early research in the AIDS epidemic that assessed the association of specific sexual activities with HIV infection often involved case controlled, retrospective studies. Practicing unprotected receptive anal intercourse was strongly associated with HIV infection (Mayer, Ayotte et al., 1986; Moss et al., 1987; Schechter et al., 1985; Weller et al., 1987). More than 100 partners in one year (Moss et al., 1987) and having more than 100 sex partners during one's lifetime (Schechter, et al., 1985) was also associated with infection. Additional risk factors included a history of gonorrhoea and illicit use of drugs (Schechter et al., 1985). Mayer, Ayotte et al. (1986) reported risk of HIV infection with oral exposure to ejaculate, a history of hepatitis B and intestinal parasites. Douching before sex was also reported as a risk factor (Moss et al., 1987). The described sex practices, which are risk factors for acquiring HIV infection, are not predictors for the development of AIDS in sero-positive men (Boyko et al., 1986; Polk et al., 1987).

In Toronto, Canada, a prospective study was carried out in which 246 sexual contacts of HIV infected men were followed for one year to determine risk factors of acquiring HIV infection (Coates, Calzavara, Read et al., 1988). There was no association between HIV sero-positivity and number of partners, but there was a strong association with activities that may cause anorectal mucosal injury. Specific activities were rectal douching, perianal bleeding, receipt of objects in ano and fisting.

In summary, any injury that disrupts rectal tissue or oral or genital mucous membranes may create a portal of entry for HIV transmission. For example, it is not the practice of fisting that by itself transmits HIV, but rather the unprotected penile insertion or shared sex toys following fisting that create the risk of infection (Canadian AIDS Society, 1988). Similarly, rectal douching or an enema may irritate the mucosal lining of the lower bowel, creating a hospitable environment for transmission of the HIV.

Safer Sex. Prevention of HIV transmission in gay and bisexual men is achieved by the avoidance of body fluids, particularly semen, during sexual activities. Alberta's safer sex guidelines group sexual activity into categories of risk, both with and without a protective barrier (Appendix B). Consistent use of condoms during vaginal intercourse in conjunction with the spermicide nonoxynol-9 has the potential to interrupt transmission of HIV, although clinical evidence to support efficacy is sparse (Centres for Disease Control, 1988a; Feldblum & Fortney, 1988). The safety and efficacy of spermicides during anal and oral intercourse is not known (Centres for Disease Control, 1988a).

The CAS (1988) suggests a spermicide such as nonoxynol-9, with a detergent base may be useful for vaginal intercourse but is not advised for anal sex because it may irritate the rectal mucosa. Recent unpublished reports from Africa and Canada question the use of nonoxynol-9 for vaginal intercourse in reducing the transmission of HIV. Nonoxynol-9 increased genital ulcer disease in Nairobi, Kenya prostitutes (Kreiss et al., 1989) and increased vaginal irritation in Vancouver female sex trade workers (Rechart, Barnett, Manzon, Wittenberg & McNabb, 1990). These results indicate a potential increase in the possibility of transmitting the HIV.

The Safer Sex Guidelines developed in 1988 by the Canadian AIDS Society (Appendix C) report anal intercourse with a protective barrier as a low risk practice on a four-point gradation system that classifies sexual practices as no risk, minimal risk, low risk and high risk. The possibility of transmitting HIV during anal intercourse with a condom is largely determined by the quality of the condom and proper, consistent use.

Condoms for anal intercourse must be stronger and more lubricated than those designed for vaginal intercourse because of the increased friction for this practice. Gay couples assessing the safety and acceptability of different types of condoms reported the following deficiencies: inadequate lubricant, unnatural appearance, rupture during use, stiffness and discomfort (Wigersma & Oud, 1987). Since condoms are considered a worthwhile means for preventing the transmission of HIV and other sexually transmitted diseases, their safety and acceptance by gay men is crucial to safer sex practices.

Factors influencing condom use were evaluated by Valdiserri, Lyter et al. (1988) in a prospective Pittsburgh study of 1,384 gay and bisexual men. The reported data were collected for a one-year period between 1986 and 1987. Research findings indicated 45% of subjects never used condoms during insertive anal intercourse and 50% never used condoms for receptive anal intercourse. Men aware of their positive HIV antibody status used condoms more frequently than either sero-negative individuals or individuals unaware of their HIV antibody status. The most common perception expressed by individuals never wearing condoms was that it "spoiled" sex.

A random survey of 1,259 Canadians indicated that a large number placed themselves at risk for acquiring HIV infection by practicing unprotected sex (Orstein, 1989). Among men with two partners within the last five years, 54% never used condoms and 43% of those with three to five partners practiced unprotected sex. Among women with two or more partners in the previous five years, 66% never used condoms while 57% with three or more partners practiced unprotected sex. The proportion of gay and bisexual men in this sample was limited in number, and therefore sex practices were not analyzed. Although subjects reported changes in sexual behaviour such as choosing partners more carefully, safer sex was not the norm.

The transition from established sex practices to safer sex is complex. Pleasurable safer sex may encourage adherence to no risk or low risk sexual activities. For example, a number of subjects from a study of 178 gay men suggested a need for information on how to enhance pleasure when practicing safer sex (Lovejoy, Moran & Paul, 1988). The AIDS Network of Edmonton Society has attempted to address this issue by offering "Eroticizing Safer Sex" workshops since the spring of 1989 (W. Hellard, Assistant Coordinator for Education, AIDS Network of Edmonton, personal communication, Jan. 17, 1989).

Other reasons for not practicing safer sex have been elucidated by several researchers. First, various psychosocial factors have been described as predictors of high risk sex practices. A recent New York Study of 1,000 gay and bisexual men using 10 predictor variables indicated emotional support and perceived difficulty in modifying sexual behaviour as statistically significant variables in predicting participation in high risk sex practices (Siegel, Mesagno, Chen & Christ, 1989). A global measure of social support (not gay network affiliations) and perceived difficulty in changing to safer sex were strong predictors of unsafe sex. While subjects accept safer sex guidelines, fewer were able to translate the necessary changes into their personal behaviour. Similarly, high self-esteem was a strong predictor of risky sex. The authors speculate high self-esteem may increase acceptance and desirability in the gay community.

A long latency period for AIDS and efficacy of HIV transmission may cause men to doubt that change to safer sex practices is warranted, especially if their past behaviour has placed them at risk. The process leading from HIV infection to AIDS remains obscure as does the development of HIV infection in a susceptible host following contact with a person presumed to be infectious as determined by the presence of HIV antibodies or a diagnosis of AIDS. A study of 135 HIV infected gay men in San Francisco concluded that 5% will develop AIDS within three years and 39% within 9.2 years (Hessol et at., 1989). A Toronto study suggests that not all subjects exposed to an HIV infected individual will show evidence of HIV antibodies or AIDS. Sexual contacts of HIV infected men were followed for six months, at the conclusion of which 45% of 148 subjects remained HIV antibody negative (Coates, Soskolne, Read et al., 1986). The scientific uncertainty regarding the incubation period for AIDS and the efficacy of HIV transmission may have behavioural consequences for populations at risk.

Finally, a segment of the gay population use casual sex to relieve stress and express their gay identity. This finding was reported in a study of 665 San Francisco homosexual men. Eighty-one per cent of subjects indicated they use "hot anonymous sex" to relieve tension and 69% didn't change their sexual behaviour because "being gay is what I do sexually" (McKusick, Horstman & Coates, 1985, p. 495).

The determinants of behaviour change in the control of AIDS represent a great public health challenge. Educating groups about safer sex practices is but one facet of behaviour change. Information about one's HIV antibody status may also contribute to change in sex practices. However, HIV antibody testing may present measurement, behavioural, ethical, and legal concerns.

HIV Antibody Testing

For the protection of the public health, communicable disease control is mandated by the Communicable Disease Regulations (Alberta Public Health Act, 1985). Public health nurses and other public health officials ensure appropriate follow-up measures when a communicable disease is reported. The screening of populations at risk is also a common public health strategy to control the spread of disease, for example, tuberculosis screening tests. Contact tracing is yet another measure employed in an attempt to halt the spread of disease and provide treatment for new cases. Because AIDS creates unique problems, the control of HIV infection has emerged as a hybrid of what was previously unquestioned public health policy. More than any other biomedical test, HIV antibody testing has raised important ethical and psychosocial issues.

Test Performance. The purpose for requesting the HIV antibody test is to diagnose evidence of past HIV infection. The formation of HIV antibodies usually occurs two to six months after exposure (Alberta Community & Occupational Health, 1988b). Reasons for requesting test information include: assisting in the diagnosis of AIDS, screening for blood donors, designing appropriate therapies and testing individuals who believe they may have been exposed to prevent the transmission of HIV (Barry, Cleary & Fineberg, 1986; Weiss & Their, 1988). People found to be sero-positive are assumed infectious to others and a high proportion of these, numbers not precisely known, will develop AIDS in the future (Perry & Markowitz, 1988). Given the implications of a reactive HIV antibody test, precision and accuracy are of utmost importance.

In Alberta a reactive HIV test is screened more than once (Appendix A). The sensitivity of the enzyme linked immunosorbent assay (ELISA) is 99% or greater under optimal laboratory conditions, and the specificity is approximately 99% (Centres for Disease Control, 1987). The sensitivity and specificity of the Western Blot is similar. The ELISA yields many more false positives than false negatives in a population with a low prevalence of HIV infection (Barry, Cleary & Fineberg, 1986; Medical Letter Inc., 1988). False negatives have also been documented in patients with AIDS (Mayer, Stoddard et al., 1986). The rate of false positives in screening military recruits in the United States was evaluated by Burke et al. (1988). Each reactive test was subjected to two ELIZA tests followed by a Western Blot. The false positive rate was 1 in 135,187 or 0.0007 percent. This rate was reported as acceptably low in screening low prevalence populations. Despite debates in the literature regarding accuracy of HIV antibody testing, "... the repeated ELISA followed by the Western Blot ranks among the most sensitive and specific test procedures in medicine" (Perry & Markowitz, 1988, p. 732).

Reporting and Counselling. Any individual in Alberta may request an HIV antibody test by contacting STD Control or their personal physician. Alberta physicians were advised late in 1988 that pretest and posttest counselling is recommended for each person tested (Alberta Community & Occupational Health, 1988b). Alberta's Health Care Insurance Plan reports that pre and posttest counselling is not contained in the regular fee schedule for Alberta physicians (G. Norris, Director of Communications, personal communication, April 19, 1990).

Alberta has adopted a voluntary HIV antibody testing program which is non-nominal, that is, the test is recorded by the use of initials or a code with the attending physician and is not reportable to public health authorities. Similarly, the provinces of British Columbia and Quebec have no legal mandate for the reporting of HIV seropositivity. AIDS is a reportable disease in all Canadian provinces and the territories (Federal/Provincial/Territorial Working Group on Confidentiality in Relation to HIV Seropositivity, 1988). The Provincial Laboratory of Public Health, Edmonton, records total number of tests by risk group as identified on test requisitions. The number of positive tests reported from January 1, 1986 to December 31, 1988 was 763 of 27,804 tests performed. Of the 763 positive tests, 551 were contained in the homosexual/bisexual risk category (Alberta Community & Occupational Health, Communicable Disease Control & Epidemiology, 1989). The estimated number of HIV infected individuals is 3,960, as an optimistic estimate, and 16,900 as a pessimistic estimate (Alberta Community & Occupational Health, 1988a).

In Canada, contact tracing of HIV antibody positive individuals is the responsibility of the individual and the personal physician with assistance from public health authorities where desired (National Advisory Committee on AIDS, 1987). Priority for contact tracing is given to women of child-bearing age and transfusion-related AIDS cases. The success of tracing contacts of HIV sero-positive individuals was demonstrated by a provider partner notification system in four U.S. states (Centre for Disease Control, 1988c). Within a 15-month period the program located 318 partners of whom 44 were positive for HIV infection.

Impact of HIV Antibody Testing on Sexual Practices

The use of HIV antibody testing in reducing the transmission of AIDS is based on the assumption that notification of test results will improve compliance with safer sex guidelines. Studies addressing the sex practices of gay and bisexual men in relation to information about HIV antibody status have primarily evaluated the number of sexual partners and the practices of insertive and receptive anal intercourse (Fox, Odaka, Brookmeyr & Polk, 1987; Frazer, McCamish, Hay & North, 1988; McCusker et al., 1988; Schechter et al., 1988; van Griensven et al., 1988).

Insertive Anal Intercourse. A study of 270 gay and bisexual men in Boston (McCusker et al., 1988) reported the practice of unprotected insertive anal intercourse was reduced to 33% of baseline levels in sero-positive men as compared to 80% of baseline levels in subjects unaware of their sero-positive status. Individuals aware (57%) of their HIV antibody negative status were somewhat more likely to continue unprotected insertive anal intercourse, compared to those unaware (48%). A Baltimore study of 1,001 gay and bisexual men supports the finding that aware sero-positives change their sexual practices more significantly compared with subjects HIV sero-negative or unaware of test results (Fox, Odaka, Brookmyer & Polk, 1988). The mean number of partners with whom unprotected anal intercourse was practiced declined to 42% of baseline levels in aware HIV sero-positive subjects. Frazer, McCamish, Hay & North (1988) report similar findings in a study of 318 gay and bisexual men in Australia. Subjects HIV sero-positive were significantly more likely to use a condom when practicing anal intercourse (insertive and receptive) than subjects HIV sero-negative. Information about HIV sero-negative status, however, did not increase condom usage compared to individuals not previously tested.

Receptive Anal Intercourse. Unprotected receptive anal intercourse was least common in sero-positive subjects aware of their HIV sero-positive test. In the Baltimore study, this activity declined to 42% of baseline in sero-positives, 55% of baseline in sero-negatives and 57% of baseline in subjects who chose not to learn of their HIV antibody status (Fox, Odaka, Brookmeyer & Polk, 1987). On the contrary, McCusker et al. (1988) found information about HIV antibody status had no effect on receptive anogenital contact. The only study differentiating the receptive partner as casual or regular was reported in the Vancouver study of 361 homosexual men (Schechter et al., 1988). Unprotected anal intercourse with regular partners (at least one sexual encounter per month) occurred more frequently in sero-negatives (47.7%) than sero-positives (23.4%). No condom use with casual partners during receptive anogenital contact was reported more frequently in sero-negatives (14.9%) versus sero-positives (1.5%).

Number of Partners. The van Griensven et al. (1988) study in the Netherlands showed a greater reduction in the number of sexual partners in sero-positives than sero-negatives. Also reported were changes in the type of sexual activity, for example subjects were more likely to terminate practicing fellatio than anogenital intercourse or masturbation. Other studies, although supporting a trend toward reducing the number of sexual partners have not attributed this change to information about antibody status (Fox, Odaka, Brookmeyer & Polk, 1987; Frazer, McCamish, Hay & North, 1988; McCusker et al., 1988; Schechter et al., 1988).

In addition to the influence of HIV antibody testing on sex practices, researchers have reported a difference in the psychological impact of choosing to become aware of HIV antibody status in comparison to subjects who decline. A study of gay and bisexual men in Pittsburgh (Lyter, Valdiserri, Kingsley, Amoroso & Rinaldo, 1987) reported that more than half of 188 subjects who elected not be informed of their HIV antibody status expressed concerns about the impact of learning an HIV sero-positive status. Reasons given for declining to know their result in descending order were: too worrisome, unable to cope, afraid to have sex, test inaccuracy and confidentiality. Depressive symptoms were reported in gay men unaware of their HIV antibody status (Fox, Odaka, Brookmeyer & Polk, 1987) and gay men aware of a positive result (McCusker et al., 1988). The latter study also reported anger and less happiness in aware sero-positive men compared to subjects unaware of their positive HIV antibody status. This study also described subjects who were aware and unaware of a negative sero-status. Subjects aware of a negative antibody test were more happy (75%) than the group unaware (50%) of their negative test result. Therefore, choosing not be informed of the HIV antibody status when it is negative creates unnecessary unhappiness.

Methodologic Issues

The influence of HIV antibody testing on sex practices reported in the foregoing studies must be interpreted with caution due to sampling and methodologic problems. Identified research limitations may include the following:

1) All studies have limited external validity due to lack of random sampling. Four studies enrolled volunteer subjects (Fox, Odaka, Brookmeyer & Polk, 1987; Frazer, McCamish, Hay & North, 1988; McCusker et al., 1988; van Griensven et al., 1988) and another recruited subjects from physicians' general practices (Schechter et al., 1988). Only one San Francisco study of gay men, to the investigator's knowledge, attempted random probability sampling from telephone lists (Bye, 1987).

2) The process of repeated questionnaires and regular medical assessment may have an effect on sex practices. Counselling and safer sex information was extended to all participants.

3) A number of studies equated the decision to not know one's HIV antibody test result with those choosing not be tested. The two may not be comparable (Lyter, Valdiserri, Kingsley, Amoroso & Rinaldo, 1987).

4) The definition of homosexual may have decreased the representativeness of the homosexual population. For example, defining homosexual as more than one sexual contact per month (McCusker et al., 1988) will exclude potential subjects who abstain from sex, this being the safest sex of all.

5) The validity of self-reported sex practices may incorrectly reflect socially acceptable

behaviour, particularly in prospective studies where anonymity is not maintained. Reasonable validity and reliability of sexual practices have been reported (Coates, Calzavara Soskolne et al., 1986; Coates, Soskolne, Calzavara et al., 1986; Salzman Stoddard, McCusker, Moon & Mayer, 1987). However, an underestimate of number of sexual partners has been reported (Maw et al., 1987).

6) Subjects participating in cohort studies, compared to those who do not, may have changed sexual activity prior to enrolling in the study.

7) The effect of HIV antibody testing on sex practices may be confounded by other extraneous variables.

Extraneous Variables

In addition to information about HIV antibody status, a number of other variables may influence sex practices reported by gay and bisexual men. These include general knowledge of AIDS, knowledge of safer sex practices, knowing someone with AIDS, alcohol and drug use, sociodemographic characteristics, and perceptions concerning the vulnerability to contracting HIV infection.

A Chicago study of 900 gay men reported that knowledge of AIDS transmission was the strongest factor in reducing their high risk sex practices (Emmons et al., 1986). Likewise, a homosexual population in Montreal reported that their sex practices were influenced by a safer sex campaign that involved a team of trained volunteers promoting safer sex by distributing health education pamphlets, posters, buttons, and t-shirts (Adrien & Carsley, 1987). Other researchers, however, reported that accurate knowledge of AIDS and unsafe sex were not predictive of sex practices (Kelly, Lawrence, Brasfield & Hood, 1987; Valdiseri, Lyter, Kingsley et at., 1987).

A reduction in number of partners was reported in subjects who had known someone personally and had seen them when they had advanced AIDS (McKusick, Wiley et al., 1985). However, a relationship was not demonstrated between a lower number of partners and having friends with AIDS.

Lovejoy and Moran (1988) and Stall, McKusick, Wiley, Costes and Ostrow (1986) have documented a positive relationship between drug and alcohol use and noncompliance with safer sex practices. Using contaminated needles to inject drugs is a high risk behaviour in the transmission of HIV but it also has an influence on safer sex practices. Siegel, Mesagno, Chin and Christ (1989) reported drug use as a predictor of high risk sex practices. Alcohol use approached statistical significance. The authors interpreted that alcohol and drug use lowers inhibitions and impairs judgement when used prior to or during sexual encounters, thereby facilitating risk-taking behaviours.

Age, education and income have been shown to affect sex practices in gay men. Age has been reported as a determinant of behaviour change, for example, sero-positive individuals greater than 30 years of age decreased their number of partners more than those less than 30 years of age (Fox, Odaka, Brookmeyer & Polk, 1987). Other aspects of age may reflect habituation to a life style of unsafe sex practices. One New York study reported a positive association between number of years of gay sexual contact and increased unsafe sex practices (Siegel, Mesagno, Chen & Christ, 1989). The study also reported gay men who were sexually active prior to the AIDS epidemic were socialized to a gay lifestyle that generally did not include safer sex practices. Conversely younger men integrated into the gay community since the AIDS crisis may be exposed to differing sex practices, including the use of condoms and limiting their number of sexual partners. While a variety of social and psychological processes may be influencing sex practices in the gay community, these factors may in part explain the result of a San Francisco study that indicated younger men were more likely to reduce their number of partners than older men (McKusick, Wiley, et al., 1985).

Educational level may also influence the capacity to change sex practices. A Montreal study indicated that a larger proportion of gay men with primary school education practice anal intercourse without using condoms as compared to gay men with a university education (Adrien & Carsley, 1987). Similarly Bye (1987) reported that gay men in San Francisco with high school or less education and an annual income of less than $40,000 tended to lag in the shift toward safer sex practices.

An "optimistic bias" or underestimation of risk in believing one is not generally vulnerable to HIV infection may exist in the gay community. In a study of 978 Chicago gay men, only 10% of the sample thought they had a very large chance of contracting AIDS, 50% thought they had some chance and 40% believed their chance of contracting AIDS was small (Emmons et al., 1986). This optimistic sense of risk was reported in men who continued to engage in risk behaviours. While the relationship between perceived personal risk and behaviour is complex, it may be influenced by a low incidence of AIDS in various geographic areas of the world. For example, in New Mexico only five cases of AIDS were reported prior to 1985, which may have been a factor in the low regular use of condoms. In a sample of 107 gay and bisexual men, only 13% reported using a condom when practicing receptive anal intercourse in 1985 (Jones et al., 1987).

In summary, awareness of a positive HIV antibody test changed sex practices with the greatest reductions reported in unprotected anal intercourse. The magnitude of change was small when compared to subjects HIV antibody negative or unaware of their test result, but the difference was nonetheless statistically significant. Only one study (Schechter et al., 1988) differentiated between casual and regular partners and in all studies the HIV antibody status of the partner was not known. Subjects HIV antibody negative report the smallest reductions in high risk sex practices. This has been explained as a possible disinhibition effect whereby the subject feels protected from HIV infection as his previous behaviours placed him at risk (Fox, Odaka, Brookmeyer & Polk, 1987; Schechter et al., 1988). This finding was not supported by McCusker et al. (1988) who reported no difference in subjects HIV antibody negative or positive with relation to the practice of unprotected and anal intercourse. Sero-negative subjects in this study did practice unprotected insertive anal intercourse to a greater degree than HIV sero-positive men. The effect on subjects unaware of their HIV antibody status has limited documentation. In all studies cited a proportion of men continued to practice unsafe sex.

AIDS education of the general Canadian public, although useful and necessary, may not be most productive in terms of numbers of cases prevented. Education, counselling and voluntary testing of persons most likely to be exposed to HIV infection is a priority. Nurses, the key public health educators, should strive to be knowledgeable about and comfortable with discussing the sex practices of gay men in order to prevent this dreadful disease, AIDS.

CHAPTER III

SAMPLE

In order to gain information on how sex practices were related to HIV antibody status, a sample of gay and bisexual men was surveyed by the use of a self-administered questionnaire (Appendix D). Sampling methods are presented followed by a description of subjects' characteristics. Descriptors for the sample included in this study were: sexual preference, demographics (age, race, education, employment, occupation and income), HIV antibody status, length of residence in Edmonton and general state of health.

Sampling Methods

Sample Design. A nonprobability survey design (Brink & Wood, 1988) was used to obtain a sample of gay and bisexual men for this study. The major research problem in studying gay and bisexual men is the lack of an efficient sampling frame from which to draw a random sample. In addition, the three groups in this study (sero-positive, sero-negative and not tested) were not identifiable until the data were collected because the occurrence in the population is unknown. Although probability samples are scientifically preferable to allow the findings from the sample to be generalized to the population with known margins of sampling error, random sampling was not feasible. This study did however attempt to go beyond convenience sampling at treatment settings, with known biases, and recruit subjects from all possible locations in the larger gay community by networking and printed advertisements.

Setting. The investigation was conducted in the Western Canadian City of Edmonton, Alberta. The population of Edmonton in the 1987 civic census was reported to be 576,249 (Greater

Edmonton Directory, 1989). Edmonton serves as the primary tratment centre for Northern Alberta with regard to treatment for persons who are HIV sero-positive or have been diagnosed to have AIDS. Although the gay community of Edmonton is essentially a covert population, the investigator became aware of key access sites following involvement with this population as a nurse providing home visiting services in the year preceding the study. Hence, by the process of networking, the investigator became familiar to leaders in the gay community and the agencies, organizations, institutions and recreational facilities used by them.

Target Population. Potential subjects were self-identified gay men who indicated on the questionnaire that their sexual orientation was gay or bisexual. All respondents over the age of 18 years who resided in or utilized services in Edmonton, and were able to read and write English, were the target population. HIV sero-positive gay men were estimated to be the lowest in number, therefore their potential numbers were estimated separately from all gay men prior to proposing the study. To ensure an adequate sample size, the number of gays at Edmonton locations known to the investigator in the spring of 1989 were estimated (Table 1).

TABLE 1

ESTIMATED NUMBER OF GAYS IN EDMONTON LOCATIONS, SPRING, 1989

	HIV POS. MALE SUBJECTS	ALL GAY SUBJECTS
AIDS Network of Edmonton		15
People with AIDS (PWA)	14	
Worried Well (HIV sero-positive, asymtomatic)	16	
Eroticizing Safer Sex Workshops		?
Churches		
Metropolitan Community Church		15
Gay Clubs		
Boots and Saddles		?
Flashback		?
The Roost		?
Gay Self Help Groups		
Alcoholics Anonymous (AA)		50
Narcotics Anonymous (NA)		15
Gay Voluntary Organizations		
Dignity (Catholic)		10
Edmontonians Networking Discretely		250
Gay Fathers		12
Gay and Lesbian Awareness Society of Edmonton		10
Gay and Lesbian Community Centre		60
Integrity (Anglican)		15
Llambda Business Counsell		10
Northern Chaps		12
Immunocompromised Clinic, University of Alberta Hospitals	37	
Recreational Facilities		
Roughnecks		10
Celebration '90 Team Edmonton		10
Sexually Transmitted Disease (STD) Clinic	87	20% of patients are gay
Physicians' Practices		?

The Alberta Provincial Laboratories of Public Health (1986-88) reported 551 positive tests in gay and bisexual men, but this may not reflect the number tested positive for the first time as some individuals are tested on more than one occasion (Alberta Community and Occupational Health, 1989).

Sample Selection. The gay and bisexual population was contacted to invite potential subjects to participate in the study. Key individuals at the Edmonton locations previously described agreed to facilitate access to the gay community for the purposes of the study. Members of gay organizations were made aware of this study by three methods: (a) a membership mail-out of the questionnaire by representatives of gay organizations, (b) a notice in a gay publication (Perceptions), the newsletter for AIDS Network of Edmonton, with questionnaire pick-up at a known location and (c) verbally by a gay colleague at a meeting or social gathering with questionnaires available for those who wished to participate.

Additional subjects were recruited by use of posters and the "snowball" sampling method (Babbie, 1986). The snowball technique was initiated by distributing questionnaires to gay and bisexual men known to the investigator who in turn were requested to distribute questionnaires to their gay and bisexual friends and acquaintances. Posters (Appendix E) with an attached pocket of questionnaires were displayed at the AIDS Network of Edmonton, the Gay and Lesbian Community Centre and given to people who suggested other locations.

Advertisements in gay publications (Appendix F) requested respondents to call a telephone number that was used only for the purposes of the study. The subject was requested to provide a fictitious name and a mailing address. The questionnaire was mailed tc a fictitious name and address to ensure anonymity.

Sample Size. The minimum sample size proposed at the onset of the study was 75. The largest sample size within a two-month data collection period was aimed for. Failure to achieve the sample of the 75 men warranted an extension of the data collection period. The practical consideration to determine sample size and allow for the data analysis proposed was availability of subjects. Although more than 75 men had participated in the study within two months, the data collection period was extended for an additional month to accommodate requests for additional questionnaires from the designated community locations.

The total number of questionnaires distributed (495) and the total number returned (205) yielded a response rate of 41% (Table 2). The calculated response rate represents the lowest possible rate of return since the number actually distributed into the hands of gay men can only be estimated. For example, one gay man known to the investigator volunteered to distribute 50 questionnaires. He gave each of five gay friends 10 questionnaires, but the number actually distributed by the five friends is not known. Nevertheless, 50 questionnaires were included in the figure of 495 as actually given to gay and bisexual men.

TABLE 2

NUMBER OF QUESTIONNAIRES DISTRIBUTED BY VARIOUS METHODS

METHOD	NUMBER REQUESTED	NUMBER DISTRIBUTED
1) Networking with gay community		
Gay bars	135	124
Church	15	12
Recreational clubs	20	16
Gay voluntary organizations	217	148
2) Posters at community locations with an attached pocket containing questionnaires	101	65
3) Snowball	69	68
4) Health care treatment centres	45	34
5) Private physicians' practices	42	8
6) Advertisement in gay publications	10	10
7) Social event	10	10
TOTAL	664	*495

*Total number returned by all methods was 205

The reported response rate for this study compares favourably with other research conducted using anonymous mailout questionnaires. The typical response rate reported by this method is between 20 and 40 percent (Nachmias & Nachmias, 1987). Dillman (1983) indicated persons are likely to respond to a survey when the costs are minimized, such as length of time to complete the questionnaire and trust in a lack of personal harm. Even difficult to reach populations will participate in a study when they believe the rewards of the results will be delivered. Considering the sampling methods, the length of the questionnaire (14 pages) and the sensitive nature of the questions asked, the response rate was greater than anticipated.

Characteristics of Respondents

Sexual Preference

The categories that best describe the sexual preference for the 205 respondents are shown in Table 3. Most of the sample reported their sexual preference as exclusively homosexual (86.8%) but 12.7% of subjects reported sex with both men and women. One subject reported his preferred sexual partner was transsexual. Another subject volunteered additional information by reporting he was a male prostitute. None of the respondents reported sex exclusively with women. Five HIV sero-positive men reported sex with women. Sex practices with women were not evaluated by the survey instrument.

TABLE 3

SEXUAL PREFERENCE OF RESPONDENTS
N = 205

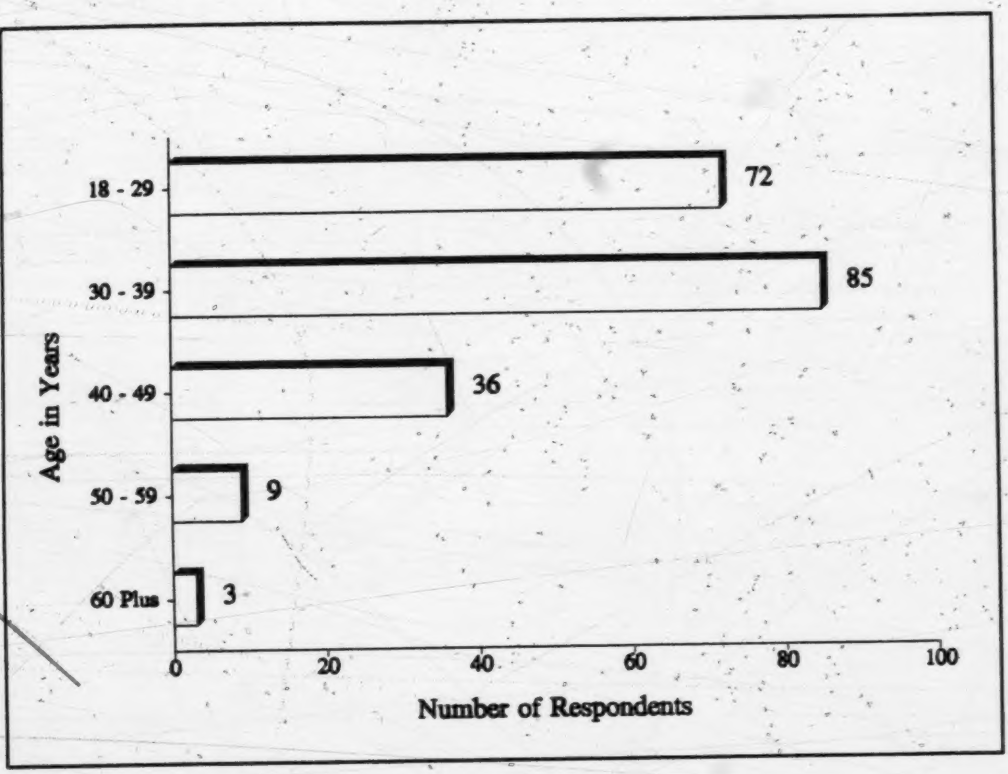
SEXUAL PREFERENCE	FREQUENCY	VALID PERCENT
Sex with men only	178	86.8
Sex mainly with men	20	9.8
Sex with women as much as men	5	2.4
Sex mainly with women	1	.5
Transsexual	1	.5
TOTAL	205	100.0

Demographic Characteristics

Age. The age range of subjects in the sample varied from 18 to 71 years. The average reported age was 33.8 years. More than 76% of the subjects were under 40 years of age (Figure 1). The mean age of the number of respondents with AIDS was 34.5 years.

FIGURE 1

AGE OF RESPONDENTS
N = 205



Race. Of the 204 respondents who answered this question, 192 (94.1%) reported their race as white. The remaining 12 (5.9%) subjects reported their race as Asian, native Canadian, metis, mulatto or mixed. Two of the 19 subjects who reported having AIDS were native Canadian. One respondent refused to answer the question because he believed his anonymity was threatened by revealing his race/ethnic origin.

Education. The highest level of education achieved by respondents (Table 4) indicated that 83 (40.7%) had a bachelors degree or higher. A random sample of Edmontonians, both male and female, conducted by the Population Research Laboratory at the University of Alberta in 1988 indicated that 19% of the sample have a bachelors degree or higher. Although this information offers a measure of comparison between the study sample and the Edmonton population, it should be interpreted with caution. First, the subjects for this study were not randomly selected and second, the Edmonton Area Study (1988) contains both males and females. The higher level of education achieved by subjects in this study may reflect a sampling bias in that the more educated may have been more willing to complete the questionnaire than those who didn't. Alternately, it may indicate that gays and bisexuals in Edmonton are more highly educated than the population from which they are drawn.

TABLE 4

EDUCATION OF RESPONDENTS
N = 204

HIGHEST LEVEL OF EDUCATION ACHIEVED	FREQUENCY	VALID PERCENT
Elementary	1	.5
Junior High	8	3.9
High School	50	24.5
Technical/Vocational	21	10.3
Community/College	41	20.1
Bachelors Degree	62	30.4
Masters Degree	15	7.4
Doctoral Degree	6	2.9
No Answer	1	missing
TOTAL	205	100.0

Employment. Approximately 73% of the subjects were employed either full-time or part-time (Table 5). Nine (4.4%) of the respondents were disabled or on sick leave. One HIV sero-positive subject reported he had taken a year off to travel after being informed of a positive test result.

TABLE 5

EMPLOYMENT STATUS OF RESPONDENTS
N = 205

	FREQUENCY	VALID PERCENT
Employed full-time	143	69.8
Employed part-time	6	2.9
Unemployed	12	5.9
Retired	6	2.9
In school	28	13.7
Disability	8	3.9
Sick leave	1	.5
Travel	1	.5
TOTAL	205	100.0

Occupation. A full description of all occupations reported by subjects is included in Appendix G. Nine subjects refused to report their occupation. One subject indicated that reporting his occupation would jeopardize his anonymity. Two subjects gave information pertaining to occupation, that is, positive characteristics, but insufficient data to allow occupation coding. All occupations grouped by the Pineo/Porter (Pineo, 1981) classification system are shown in Table 6. Seventy-one subjects (36.7%) were employed as semi-professionals or higher.

TABLE 6

OCCUPATION OF RESPONDENTS *

N = 194

OCCUPATION CATEGORY	FREQUENCY	VALID PERCENT
Self-employed Professional	4	2.1
Employed Professional	26	13.4
Hi Management	11	5.7
Semi-Professional	30	15.5
Technician	1	0.5
Mid Management	25	12.9
Supervise	15	7.7
Skilled, Clerical, Sales	14	7.2
Skilled, Craft, Trade	7	3.6
Farmers	1	0.5
Semi-Skilled, Clerical	26	13.4
Semi-Skilled, Manual	8	4.1
Unskilled, Clerical/Sales	8	4.1
Unskilled, Manual	7	3.6
Retired, Student, Unemployed	11	5.7
No Answer	11	missing
TOTAL	205	100.0

*Pino/Porter Classification System

Income. Ninety-four subjects (45.9%) reported yearly incomes of $30,000 or higher (Table 7). All respondents reported incomes of less than $100,000 yearly.

TABLE 7

YEARLY INCOME OF RESPONDENTS

N = 205

YEARLY INCOME BEFORE DEDUCTIONS	FREQUENCY	VALID PERCENT
less than 10,000	39	19.0
10,000-19,999	39	19.0
20,000-29,999	33	16.1
30,000-39,999	45	22.0
40,000-49,999	25	12.2
50,000-59,999	11	5.4
60,000-69,999	6	2.9
70,000-79,999	3	1.5
80,000-89,999	2	1.0
90,000-99,999	2	1.0
TOTAL	205	100.0

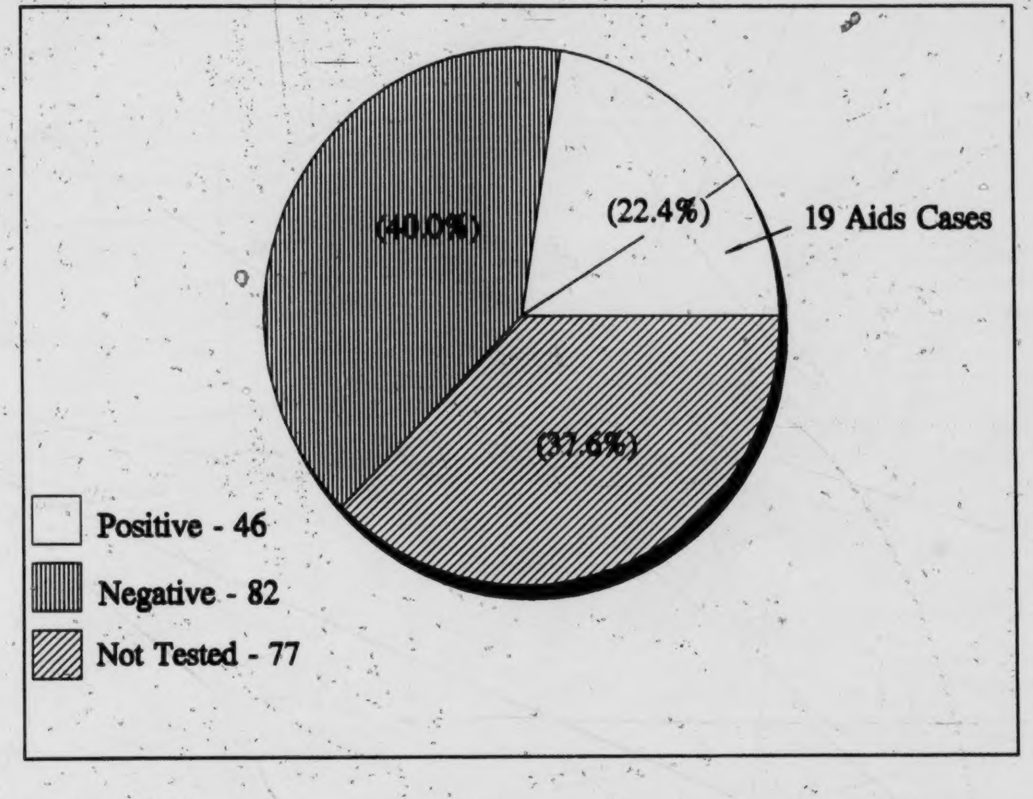
As was shown when reporting level of education, the yearly income of the study sample is higher than that of the Edmonton population (Edmonton Area Study, 1988). This difference must be interpreted with caution for the same reasons stated earlier when discussing education. In the general population of Edmonton, 28.1% reported incomes of $30,000 or greater per annum compared to 45.9% of this sample of gay and bisexual men.

HIV Antibody Status

Of the 205 respondents, 129 (62.9%) reported having had an HIV antibody test and 76 (37.1%) had never been tested. One subject was tested to become a participant in an Edmonton study but elected not to be informed of the result. For purposes of data analysis concerning sex practices this subject was grouped with those not tested. The proportion of subjects grouped by HIV antibody status is shown in Figure 2. Nineteen (9.4%) of the men in the sample had been diagnosed as having AIDS.

FIGURE 2

HIV ANTIBODY STATUS OF RESPONDENTS
N = 205



Respondents who had an HIV antibody test were asked to report the number of times they were tested. Forty-seven (38.8%) of the subjects who responded to this question were tested once (Table 8), while 11 (9.1%) were tested between five and ten times.

TABLE 8

NUMBER OF TIMES HIV ANTIBODY TESTED

N = 121

NUMBER OF TIMES TESTED	FREQUENCY	VALID PERCENT
1	47	38.8
2	37	30.6
3	18	14.9
4	8	6.6
5	7	5.8
6	1	0.8
10	3	2.5
Don't Know	3	missing
Not Tested	76	missing
No Answer	5	missing
TOTAL	205	100.0

Subjects were not asked to state reasons for frequent testing. One subject reported he was a volunteer for a study that required frequent HIV antibody testing.

In addition to reporting their HIV antibody status and number of times tested, subjects were asked to report the date of their first HIV antibody test result. Respondents reporting a negative HIV antibody test indicated they were first informed of the negative test result between 1983 and 1989. Approximately half (52.9%) reported they were informed of their negative test result between 1983 and 1987. Subjects reporting a positive HIV antibody test were informed of their first test result between 1984 and 1989. Once again approximately half (48.9%) were informed of their positive HIV antibody test prior to and including 1987. This offers support for the decision to select the summer of 1987 for the group not tested for purposes of determining the relationship between information about HIV antibody status and change in sex practices.

Length of Residence in Edmonton

Since the first case of AIDS in Alberta was reported in 1982, it was of interest to determine the number of years subjects had resided in Edmonton. If the respondent had relocated to Edmonton within the last seven years, he was asked to name the geographic location (city, province, or state and country) from which he had moved. The average number of years subjects resided in Edmonton was 11.3 years with a reported range of less than one year to 55 years. Approximately one third of the sample (36.3%) moved to Edmonton less than seven years ago. More than 93% of those that relocated to this city in the last seven years moved from other geographic locations within Canada. The remaining 7% moved from the United States, England, Denmark and South Africa. Of those who moved within Canada, approximately 46% relocated to Edmonton from various geographical locations in Alberta. Other provinces named with greatest frequency were Ontario (12.9%), British Columbia (11.4%), Saskatchewan (11.4%) and Manitoba (5.7%).

Most of the subjects (87.5%) moved from other urban centres. The cities most frequently named were Calgary (11.1%), Toronto (9.7%), Saskatoon (5.6%), Vancouver (5.6%) and Winnipeg (5.6%). Only 2.7% of those who moved to Edmonton had resided in Los Angeles. The reported proportion of the sample that moved from urban centres may be inflated due to the lack of a clear distinction between urban and rural. For example, subjects that reported relocating from Red Deer may have lived in a rural area outside Red Deer.

State of Health

Since HIV sero-positively may be a determinant of health and subsequent sexual activity, subjects were asked to rate their current state of health on a five point ordinal scale ranging from poor to excellent (Table 9). Eight-nine (43.6%) of respondents rated their health as excellent and only two subjects (1%) rated their health as poor.

TABLE 9

HEALTH OF RESPONDENTS
N = 204

VALUE		FREQUENCY	VALID PERCENT
Poor	1	2	1.0
	2	8	3.9
	3	30	14.7
	4	75	36.8
Execellent	5	89	43.6
No Answer		1	missing
TOTAL		205	100.0

CHAPTER IV

METHODS

As was stated in Chapter III, the survey was deemed the most appropriate method of research for this study. The data for survey research is collected by mail, telephone or personal interview (Nachmias & Nachmias, 1988). Lower cost, smaller interviewer bias, anonymity and accessability were the determined advantages for selecting the mailed questionnaire for this investigation. It was recognized that the investigator had no control over who filled out the questionnaire and that no opportunity to probe for additional information existed. The ensuing discussion addresses the methodological issues of this study including: design, questionnaire construction, ethical considerations, reliability and validity, data collection procedures and data analysis.

Design

The descriptive survey design for the purpose of comparing three groups (Brink & Wood, 1989) was selected for this study because certain assumptions were met: (a) the independent variable was selected on the basis of information about HIV antibody status (sero-positive, sero-negative or not tested) and could not be manipulated by the investigator, (b) the dependent variable (sex practices) was a retrospective time series measurement, and (c) a predictive hypothesis based on the literature review indicated there was a difference in sex practices among the three groups based on information about HIV antibody status. A limitation of the design selected for this study was a nonprobability sampling technique.

The data collected provided for a description of information about HIV antibody status and specific extraneous variables, together with an ordinal measure of 13 sex practices to determine change. This study compared the sex practices of two groups at two points in time. Group A had been HIV antibody tested and group B had not. The sex practices of group A were measured for change between the time of their first HIV antibody test and the date of completing the questionnaire. The sex practices of group B were measured for change between the summer of 1987 and the date of completing the questionnaire. For subjects not tested (group B), the summer of 1987 was the time selected to measure change in sex practices as it was an approximate mid-point for the time when the HIV antibody test was available in Alberta (November, 1985) and the data collection period for this study.

Questionnaire Construction

A structured fixed alternative questionnaire was used to collect the data. Most items were adapted from questionnaires utilized in previous studies assessing the sex practices of gay men (Joseph, 1986; McKusick, 1988; Stoddard, 1988; Valdiserri, 1988). The following list of items indicate where the questions for this project were obtained: questions 21, 22, 23, 24, 25, 26, 27, 28, 29 (Valdiserri, 1988); 1, 6, 11, 12, 20, 21, 22, 23, 33, 34, 35 (Stoddard, 1988); 2, 7, 13, 14 15, 20, 21, 22, 23, 30, 33, 36, 37 (McKusick, 1988); and 3, 4, 5, 9 (Joseph, 1986). The reliability and validity of any of the U.S. questionnaires is not reported. A questionnaire utilized in an ongoing study of a cohort of homosexual men at the University of British Columbia, Vancouver was received after the survey instrument was constructed and therefore was not used as a direct resource for this study (Craib, 1989).

The first part of the questionnaire (Q1,2) collects data pertaining to AIDS. It also contains questions (3,4) asking about friends or lovers having AIDS (which may affect sex practices). The second section (Q5-15) deals with sexual relationships, sexual dysfunction, and celibacy or abstinence. Next are questions (16-24) pertaining to the HIV antibody test and questions (25,26) measuring specific sex practices on an ordinal scale at two points in time. These items are followed by questions (27-43) about extraneous variables that may influence gay and bisexual sex practices: alcohol and drug use, knowledge of AIDS, knowledge of safer sex practices and perceptions concerning vulnerability to HIV infection. The last questions collected demographic data such as age, racial origin, education, occupation, employment and income. Most items on the questionnaire were fixed alternative questions.

Four open-ended questions were contained in the survey instrument. Three sought information on activities surrounding the HIV antibody test such as pretest and posttest counselling, perceptions of discrimination as a result of HIV antibody status and what subjects did when they learned of their HIV antibody test result. The fourth appeared at the end of the questionnaire inviting subjects to comment on anything they viewed as relevant to the research project.

Occupation questions contained in the questionnaire were modelled by the Statistics Canada (1981) Standard Occupational Classification (SOC) utilized in the 1981 census which is a revised four-digit occupation coding scheme originally developed by Pineo-Porter-McRoberts (Pineo, 1980). This method provided a systematic classification structure for grouping a wide range of occupations into 17 socio-economic categories that ensured homogeneity within groups and distinctions between them. The SOC is frequently used in statistical surveys and is machine readable for computer analysis.

The questionnaire sought information on potentially sensitive topics, including sex practices. The use of vernacular language was carefully considered following consultation with both a gay educator (W. Hellard, Assistant Coordinator for Education, AIDS Network of Edmonton, personal communication, January 17, 1989) and a researcher who has conducted studies on gay sex practices (C. Soskolne, Professor, University of Alberta, personal communication, January 10, 1989). Questionnaires from Chicago (Joseph, 1986), Pittsburgh (Valdiserri, 1988), and Boston (Stoddard, 1988) similarly use varying degrees of vernacular language. The use of vernacular language likely contributed to the respondents understanding of questions contained in the questionnaire.

Ethical Considerations

All gay men informed of the study read the "Handout for Potential Subjects" in Appendix H which was included with each questionnaire. The computer determined readability index of the handout was aimed at a grade seven level. Although a readability index at a grade seven level may not be appropriate for the general population, it apparently posed no problem for gay and bisexual men. The terms used in the handout were very familiar to this population. The remarkable lack of missing data in questionnaires returned is evidence for this statement. In addition, all questionnaires returned to the investigator were used in the final data analysis as the instructions for completing the questionnaires were followed by all subjects. Respondents were encouraged to retain the handout for future reference after completing the questionnaire.

This research project was approved by the Ethics Review Committee of the Faculty of Nursing at the University of Alberta, Edmonton. Consent to cooperate in the study was inferred from the return of a questionnaire. In order to maintain anonymity, the questionnaires were not identified in any way. Each questionnaire included instructions to the respondent to fill out the questionnaire only once. Completed questionnaires were stored in a locked file. All questionnaires were destroyed at the end of the study. There were no known physiologic, psychologic or social risks associated with participation in the study. The benefit of the study, to both the gay community and society, is the potential for further understanding in order to reduce the prevalence of AIDS.

Reliability and Validity

The items in the questionnaire have content validity (Brink & Wood, 1988; Nachmias & Nachmias, 1987). Content validity was determined by a judge panel, that is, the thesis committee, medical infectious disease specialists and educators from the gay community, to determine the questions represented the known literature relevant to this study. Reliability of the instrument was determined prior to beginning the study in a test-retest procedure involving a sample of gay and bisexual men from a community near Edmonton. Other measures of reliability were determined from the data when the study was complete. The discussion that follows describes these measures of reliability.

Pretest of Instrument. During July and August of 1989 gay and bisexual men who were members of the Peace Gay Association in Grande Prairie, Alberta, were asked to complete a questionnaire on two occasions, two weeks apart, to determine the stability of the questionnaire over time, the average length of time to complete the questions, and problems in construction or administration. The City of Grande Prairie, located 456 kilometres northwest of Edmonton with a population of 27,208, was the selected location for pilot testing the survey instrument. Reasons for selecting Grande Prairie as the test site were: (a) characteristics of gay and bisexual men were believed to be similar to the gay community in Edmonton, (b) testing the questionnaire outside Edmonton conserved the sample size for this study, and (c) the chairman of the Peace Gay Association volunteered to distribute the questionnaire at planned social events during the summer of 1989.

The Chairman of the association distributed both questionnaires at the same time to 10 members that were number coded in pairs, and they were asked to answer the questions as accurately as possible. On both occasions each member completed a questionnaire coded with the same number. Anonymity was maintained because names were not requested. Results from each respondent's first questionnaire were tabulated with the responses of their second for agreement or no agreement of answers. The overall agreement of summed questions that were not expected to change in the two-week test-retest interval varied from 82% to 93% indicating a good measure of reliability of the questionnaire. However, two questions did not elicit reliable information.

Subjects were unable to reliably recall and report the exact number of times they engaged in specific sex practices in the 30-day time period before their first HIV antibody test and the 30 days preceding completion of the questionnaire. Although numeric data were desirable for analysis, the question was changed to an ordinal scale and tested again in the same population. In addition, the demographic question concerning occupation did not adequately describe what the respondents work entailed, and therefore this question too was altered to model the Pineo-Porter occupational classification system described earlier. The revised questionnaire was readministered in sets to eight subjects. In total 10 of 17 (58.8%) subjects returned their questionnaires on the original and revised questionnaire. An additional two questions had minor word changes.

Tests of internal consistency were conducted on responses to alternate form questions on both pilot and study data. If a subject responded in a particular way to one question, he was expected to respond in a predicted way in another (Brink & Wood, 1988). Many instances of perfect correlation existed between alternate form questions; only a few examples are cited. First, subjects who reported having AIDS (Q2) in all instances indicted their HIV antibody status as positive (Q18); second, the number of subjects that reported having an HIV antibody test (Q16) was equivalent to the summed total of subjects who reported an HIV antibody negative or positive test result (Q18); third, subjects who reported not having sex in the last six months because they were afraid of spreading AIDS (Q9) all reported a positive HIV antibody test (Q18); and fourth, the number of respondents who indicated they had counselling when they were given their HIV antibody test result (Q20) was equivalent to the number indicating how they were notified of their HIV antibody test result (Q21).

Reliability of Study Data. To prepare specific variables for bivarate and multivarate analysis it was necessary to obtain a composite score of an attribute measured by a set of questionnaire items. Three variables in this study were measured by multiple items: general knowledge of AIDS (seven items), safer sex knowledge (13 items), and sex practices (13 items). A score obtained from a number of items measuring one attribute was considered a more reliable indicator of the attribute being measured then a response to one item (Babbie, 1989). Nachmias and Nachmias (1987) and Babbie (1989) describe the construction of indexes to obtain a composite measure by combining two or more items. Indexes are obtained by the simple accumulation of scores for a variable. Items in an index may be differentially weighted prior to obtaining a composite score. The Crohnbach's alpha coefficient was the statistical test used to measure internal consistency for the indexes constructed. This measure of reliability was obtained by correlating each item with other items and the overall score (Brink & Wood, 1988). Only items with high correlations were retained in the final index.

The practice index was constructed to obtain an overall measure of risk for each subject pertaining to the 13 sex practices items (Q25 or Q26). The index was constructed utilizing the categories of risk for sexual activities developed by the CAS (1988) as weights. For example, unprotected anal intercourse was rated as 4 (very high risk) and mutual masturbation was rated 1 (no risk). Any particular respondent, who practiced all of the 13 sex practices would receive a score of 37 (Table 10). The reliability of the practice index (constructed from 13 items) was very good yielding a standardized alpha of .8227. Reliability analysis did not suggest deleting any items to improve the reliability of the index.

The limitations of the practice index were a lack of clear boundaries between the four levels of risk and that it did not reflect the number of times a specific sex practice was performed. For example, a subject who practiced unprotected anal intercourse a multitude of times was more at risk of acquiring the HIV than a subject who practiced it once, but in the practice index each was assigned the same score. As stated earlier in the section describing the pilot test, subjects were unable to reliably report the number of times they engaged in a particular sex practice. Construction of the practice index was a method of obtaining a composite score of risk for each subject. Empirically, it has been determined that there is a gradation of risk in specific sex practices validating the use of weights in the development of the practice index.

TABLE 10

CATEGORIES OF RISK BY CAS (1988) WITH SEX PRACTICES

SEXUAL ACTIVITY	DEGREE OF RISK	WEIGHT
Mutual Masturbation	no risk	1
Protected Insertive Fellatio (ejaculation)	minimal risk	2
Protected Receptive Fellatio (ejaculation)	minimal risk	2
Unprotected Insertive Fellatio (ejaculation)	minimal risk	2
Unprotected Receptive Fellatio (ejaculation)	low risk	3
Protected Insertive Anal	low risk	3
Protected Receptive Anal	low risk	3
Insertive Fisting (no glove)	low risk	3
Receptive Fisting (no glove)	low risk	3
Douche or Enema	low risk	3
Unprotected Insertive Anal	high risk	4
Unprotected Receptive Anal	high risk	4
Shared Sex Toys	high risk	4
TOTAL RISK		37

The safe test index was constructed by obtaining a composite score for each subject on thirteen safer sex knowledge questions (Q33). The reliability of the safe test index yielded a standardized alpha of .7675. Deleting a particular item did not improve the reliability of the index. Three subjects had difficulty answering the question. One respondent's comment in the margin reflected an ambiguity in the item for the three respondents:

> *More safe than what? Needs a standard of comparison e.g. more safe than unprotected anal intercourse.*

The knowledge index was constructed by obtaining a composite score for each respondent on seven general knowledge of AIDS questions (Q29, 30, 31, 32, 34a, 34b and 34c). The reliability of the knowledge index yielded a standardized alpha of .5464. Deleting items did not improve this alpha to any great degree. The relatively low alpha indicated the knowledge index was not a reliable measure of knowledge. Possible reasons the index was not a reliable measure of knowledge are (a) the items in the index were not good predictors of knowledge or (b) there were an inadequate number of items to adequately measure knowledge.

Procedures for Data Collection

The data collection was completed in a three-month time period extending from October to December of 1989. All questionnaires were returned in a self-addressed envelope to the investigator at the Faculty of Nursing at the University of Alberta, Edmonton. Returned questionnaires were categorized according to information about HIV antibody status resulting in 46 sero-positive subjects, 82 sero-negative subjects and 77 subjects who had never been tested. Four questionnaires received after the data collection completion date (December 31, 1989) were not included in the data analysis.

A representative of Gaylines Calgary contacted the investigator (December 8, 1989) volunteering to have members participate in this study. The offer was declined because the investigation was limited to Edmonton. One subject contacted the investigator (November 20, 1989) on the telephone number used for this study to ensure all Edmonton community locations to access gay and bisexual men had been included for the recruitment of subjects. All the suggested sites had been contacted for the purpose of questionnaire distribution. No crank calls were received on the telephone number used for this study and no inappropriate comments were attached to returned questionnaires. There was a remarkable lack of missing data in the returned questionnaires and all of the 205 questionnaires were used in the data analysis.

Data Analysis

All data were computer-coded and processed on the University of Alberta computer system using SPSS^x program (Norusis, 1988). The data were prepared for computer analysis by coding responses into numerals according to the code book used for this study. The coded responses were then transferred to a code sheet by the investigator and checked by a second person. The data from code sheets were entered into a computer data file and verified by entering the data a second time to detect errors by differences in the first and second entry. A final check for errors was conducted by a data cleaning procedure. Frequencies and cross tabulations were checked for inconsistent data. The final data file was considered error-free.

The variables in this study were measured on nominal, ordinal and interval scales. To facilitate data analysis, a number of variables were changed to create new variables. Three types of transformations were made. First, new variables were created by collapsing the categories of original variables. For example, age (Q36), a ratio variable, was grouped to form an ordinal scale by decade. This grouping better lended itself to tabular analysis. Second, dummy variables were created for variables measured at a nominal level such as information about HIV antibody status. This dummy coding allowed for the inclusion of information about HIV antibody status in multiple regression analysis. A third variable transformation was to give an ordinal variable a metric value. For example, the original income variable (Q42) reported in an ordinal scale was changed to a ratio variable. The dollar value of each category was changed to the midpoint dollar value of each category. The resulting continuous variable allowed for statistical tests that required interval data. The initial step in data analysis was to obtain frequencies and measures of central tendency. Next contingency tables were utilized to display the relationship between variables. The cross-tabulation of variables was an organizational step for future statistical analysis.

The tests of relationships between variables used the Chi-square test for nominal data and the Pearson Product Moment Correlation (r) for ordinal, interval and ratio-scales (Brink & Wood, 1988). The Chi-square test determined differences in frequencies between variables such as HIV antibody status (positive, negative or not tested) and partner variable (regular partner, no regular partner or regular partner plus others). The Chi-square test determined a true difference in frequency other than those that would occur by chance alone. The correlation coefficient or *r* was used to determine relationships between variables such as HIV antibody status and number of lifetime partners. The correlation is reported as positive or negative between +1 and -1.

Inferential statistics were used to test the null hypothesis that there is no difference among the three groups (positive, negative and not tested) and sex practices. Ordinal data describing the sex practices of the three groups were compared to detect significant differences in group means by the analysis of variance (ANOVA) procedure. The F test determined if there was a significant difference among the means of the groups but not which specific group means were different from each other. A post hoc comparison test, the Scheffe's test, specified which two means were different from each other.

When the difference of the three means was large enough, the null hypothesis was rejected and the difference was reported as statistically significant. The "p-value" (probability of getting observed differences between means) or "level of significance" was set at the 0.05 level. To reject the null hypothesis when it was true represented a Type I error. The alpha or probability of making this error was five times out of 100.

Secondary analysis utilized a regression method of analysis to assess the effect of extraneous variables on sex practices. The contribution of each variable in the regression equation to the explained variance of the dependent variable, the sex practice index was determined. The correlation-covariance matrix was utilized to support the strength of association between the dependent variable (sex practices) and extraneous variables: knowledge of AIDS, knowledge of safer sex, knowing someone with AIDS, alcohol and drug use, sociodemographic characteristics, perceptions of risk in contracting HIV infection and information about HIV antibody status.

Results from open ended questions (22, 23, 24 & 43) were examined separately. Content analysis was used to identify themes in the responses (Nachnias & Nachmias, 1987). Emerging themes were treated as nominal data and subjected to frequencies. Themes in pooled responses were utilized to support the quantitative results reported in this study.

CHAPTER V

RESULTS AND DISCUSSION

The data provided by subjects HIV antibody positive, negative and not tested were arranged into three broad categories: characteristics of respondents, sexual behaviour and knowledge and experience. All variables in these categories were subjected to statistical tests to determine significant differences according to information about HIV antibody status. The discussion that follows will provide a profile of these differences.

Characteristics of Respondents by HIV Antibody Status

Differences in characteristics of respondents according to information about HIV antibody status were detected in certain demographic variables and a self-report of state of health. There was not a statistically significant ($p<.05$) difference between sexual preference and subjects HIV sero-positive, sero-negative and not tested.

Demographic Characteristics

Subjects grouped according to information about HIV antibody status were not significantly different by age, race and income. Statistically significant differences were detected by education, employment and occupation.

Education. Level of education was converted into years of education resulting in increments with a low of six years for elementary school and a high of 20 years for a doctoral degree. There existed a statistically significant difference ($p<.05$) between years of education and HIV antibody status. The mean years of education for the three groups were: HIV sero-positive (13.4 years), HIV sero-negative (14.4 years) and not tested (14.6 years). Men HIV sero-positive had completed fewer years of education compared to men HIV sero-negative or not tested.

Employment. Subjects unemployed were statistically (p<.05) more likely to be HIV sero-positive than HIV sero-negative or not tested (Table 11). Thirteen of 46 (28.2)% HIV sero-positive subjects were either unemployed, disabled or on sick leave compared to 5 (6.0%) HIV sero-negative and 3 (3.9%) not tested.

TABLE 11

EMPLOYMENT BY HIV ANTIBODY STATUS
N = 205

EMPLOYMENT	NEGATIVE	POSITIVE	NOT TESTED	ROW TOTAL
Employed full-time	60 (73.2)	26 (56.5)	57 (74.0)	143 (69.8)
Employed part-time	3 (3.7)	2 (4.3)	1 (1.3)	6 (2.9)
Unemployed	2 (2.4)	7 (15.2)	3 (3.9)	12 (5.9)
Retired	1 (1.2)		5 (6.5)	6 (2.9)
In School	13 (15.9)	4 (8.7)	11 (14.3)	28 (13.7)
Disability	3 (3.7)	5 (10.9)		8 (3.9)
Sick Leave		1 (2.2)		1 (0.5)
Travel		1 (2.2)		1 (0.5)
COLUMN FREQUENCY TOTAL PERCENT	82 (40.0)	46 (22.4)	77 (37.6)	205 (100.0)

A further breakdown of HIV antibody status (Table 12) indicates subjects with AIDS are more likely to be unemployed, ill or disabled than those who are HIV sero-positive without a diagnosis of AIDS.

TABLE 12

EMPLOYMENT BY HIV ANTIBODY STATUS AND AIDS
N = 205

EMPLOYMENT	AIDS	POSITIVE	NEGATIVE	NOT TESTED	ROW TOTAL
Employed full-time	10 (52.6)	16 (59.3)	60 (73.2)	57 (74.0)	143 (69.8)
Employed part-time		2 (7.4)	3 (3.7)	1 (1.3)	6 (2.9)
Unemployed	4 (21.1)	3 (11.1)	2 (2.4)	3 (3.9)	12 (5.9)
Retired			1 (1.2)	5 (6.5)	6 (2.9)
In school	1 (5.3)	3 (11.1)	13 (15.9)	11 (14.3)	28 (13.7)
Disability	3 (15.8)	2 (7.4)	3 (3.7)		8 (3.9)
Sick leave	1 (5.3)				1 (0.5)
Travel		1 (3.7)			1 (0.5)
COLUMN FREQUENCY TOTAL PERCENT	19 (9.3)	27 (13.2)	82 (40.0)	77 (37.6)	205 (10.0)

Occupation. There was a statistically significant difference ($p<.05$) between subjects sero-positive and subjects not tested and the occupation classification scale ranging from one (high status) to 17 (low status). None of the subjects were classified into occupation category 8 (foremen) or occupation category 16 (farm labourers). Subjects HIV sero-positive rated lowest in status on the occupation scale with a mean of 9 compared to subjects HIV sero-negative (7.9) and those not tested (6.7).

TABLE 13

OCCUPATION BY HIV ANTIBODY STATUS *
N = 194

OCCUPATION	NEGATIVE	POSITIVE	NOT TESTED	ROW TOTAL
1.00 Self-employed professional	1 (1.3)		3 (4.0)	4 (2.1)
2.00 Employed professional	10 (13.0)	4 (9.5)	12 (16.0)	26 (13.4)
3.00 Hi management	5 (6.5)	1 (2.4)	5 (6.7)	11 (5.7)
4.00 Semi-professional	10 (13.0)	7 (16.7)	13 (17.3)	30 (15.5)
5.00 Technician		1 (2.4)		1 (.5)
6.00 Mid management	10 (13.0)	2 (4.8)	13 (17.3)	25 (12.9)
7.00 Supervisory	6 (7.8)	2 (4.8)	7 (9.3)	15 (7.7)
9.00 Skilled, clerical sales	7 (9.1)	3 (7.1)	4 (5.3)	14 (7.2)
10.00 Skilled, craft, trade	1 (1.3)	5 (11.9)	1 (1.3)	7 (3.6)
11.00 Farmers		1 (2.4)		1 (.5)
12.00 Semi-skilled, clerical	14 (18.2)	5 (11.9)	7 (9.3)	26 (13.4)
13.00 Semi-skilled, manual	2 (2.6)	4 (9.5)	2 (2.7)	8 (4.1)
14.00 Unskilled, clerical sales	5 (6.5)	1 (2.4)	2 (2.7)	8 (4.1)
15.00 Unskilled, manual	3 (3.9)	3 (7.1)	1 (1.3)	7 (3.6)
17.00 Retired, student	3 (3.9)	3 (7.1)	5 (6.7)	11 (5.7)
COLUMN FREQUENCY TOTAL PERCENT	77 (39.7)	42 (21.6)	75 (38.7)	194.0 (100.0)

* Pineo/Porter Classification System

Health. Subjects HIV sero-positive were statistically more likely ($p<.05$) to rate their state of health as poor compared to those who were HIV sero-negative or not tested (Table 14). Subjects who rated their health as excellent were more likely to belong to the group not tested (50.6%) or HIV sero-negative (49.4%). Proportionately fewer HIV sero-positive subjects (21.7%) rated their health as excellent.

TABLE 14

HEALTH BY HIV ANTIBODY STATUS
N = 204

HEALTH	NEGATIVE	POSITIVE	NOT TESTED	ROW TOTAL
Poor 1		2 (4.3)		2 (1.0)
2	2 (2.5)	6 (13.0)		8 (3.9)
3	9 (11.1)	15 (32.6)	6 (7.8)	30 (14.7)
4	30 (37.0)	13 (28.3)	32 (41.6)	75 (36.8)
Excellent 5	40 (49.4)	10 (21.7)	39 (50.6)	89 (43.6)
COLUMN FREQUENCY TOTAL PERCENT	81 (39.7)	46 (22.5)	77 (37.7)	204 (100.0)

Sexual Behaviour

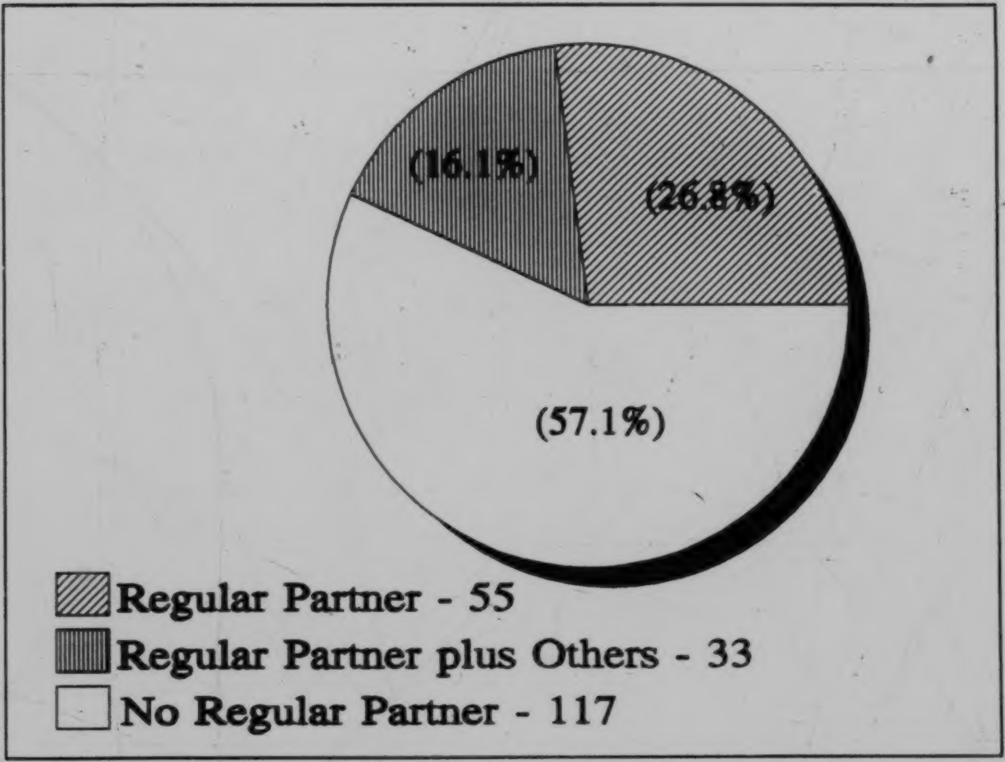
Sexual behaviours of the total sample of men according to information about HIV antibody status are represented by type of partner, "casual" sex, group sex and number of partners. In addition, the proportion of subjects who have abstained from sex in the last six months and reported having sex under the influence of alcohol or drugs are described. Next, the sex practices of subjects are analyzed for change. The final analysis explores relationships between the sex practice index and selected variables which are then subjected to a multivariate analysis technique.

Sex Partner Information

Type of Partner. Subjects were asked if they had a regular sexual partner, how long they had that regular sexual partner and if they had sex with individuals other than their regular sexual partner. Less than half, 88 (42.9%) of respondents, reported they had a regular partner (Figure 3).

FIGURE 3

PARTNER INFORMATION
N = 205



Of the group that reported having a regular partner, 33 (37.5%) had sex with someone other than their regular partner. Therefore, 55 (26.8%) of the total sample of 205 were in a perceived monogamous relationship; however, the fidelity of the partner is not known. The self-defined duration of "regular" varied from less than one month to 24 years. One half (51.8%) of respondents who reported having a regular partner were in this relationship for two years or less. Nineteen (41.3%) of HIV sero-positive subjects reported having a regular partner, but the difference among those HIV sero-positive, HIV sero-negative or not tested and whether they had a regular partner was not statistically significant. In all three groups more than half (57.1%) indicated they did not have a regular partner.

"Casual" Sex. Subjects were asked how many of their sex partners in the last six months would be regarded as "one night stands" (Table 15). Approximately one-quarter (25.9%) reported that all of their sex partners in the last six months were "casual" (one night stands). An additional 20% reported casual partners in half or more than half of their sexual encounters. There was not a statistically significant difference between subjects who were HIV antibody positive, negative or not tested and casual sex partners.

TABLE 15

RESPONDENTS' CASUAL PARTNERS
N =205

CASUAL PARTNERS	FREQUENCY	VALID PERCENT
All of them	53	25.9
more than half	27	13.2
half of them	14	6.8
less than half	17	8.3
none of them	64	31.2
NA (no sex last 6 months)	30	14.6
TOTAL	205	100.0

Group Sex. Subjects were also asked to report the proportion of sexual encounters in the last six months that involved group sex activity (Table 16). A small number, 13 (6.5%) of the respondents, reported group sex activity. Two subjects (1%) reported all their sexual activity in the last six months involved group sex. One of the two subjects was HIV sero-positive. In total, five HIV antibody positive subjects reported group sex in the last six months. There was not a statistically significant difference between information about HIV antibody status and whether their sexual activity involved group sex.

TABLE 16

RESPONDENTS' GROUP SEX
N =202

GROUP SEX	FREQUENCY	VALID PERCENT
All of them	2	1.0
more than half	3	1.5
less than half	8	4.0
none of them	159	78.7
NA (no sex last 6 months)	30	14.9
No answer	3	missing
TOTAL	205	100.0

Number of Partners. Subjects were asked to report the number of partners in their lifetime and the number of different male sexual partners in the last six months. The range in reported number of lifetime partners was from zero to 5,000. One subject who reported zero lifetime partners wrote in the margin of the questionnaire that his sexual orientation was gay, but he was a virgin. Six subjects failed to respond to this question but offered written comments: *Numerous tea room and washroom contacts, a great many*, and *I frequented bathhouses in Edmonton and Calgary from 1978 to 1984 (only to a limited degree). I was married and lived in various rural communities; therefore opportunities were not that great. I would suspect there are perhaps 30 encounters that escape my memory.* Half (50.3%) of the respondents reported 40 or fewer partners in a lifetime. Although initially there did not appear to be a statistically significant difference between the number of lifetime partners and HIV antibody status, this was attributed to a skewed distribution. The number of lifetime partners was transformed into the logarithm of the number of lifetime partners prior to assessing a difference among means. This procedure yielded a statistically significant difference (p<.05) in number of lifetime partners by HIV antibody status. HIV antibody positive subjects had more lifetime partners than subjects not tested.

The number of different male sex partners in the last six months varied from zero to 100. More than half the subjects (55.2%) reported two or less partners in the last six months. The difference between information about HIV antibody status and number of partners in the last six months was not statistically significant.

Sexual Abstinence

In order to determine the lack of sexual activity in the study sample, subjects were asked to report the date they last had sex and if they had sex in the last six months. If they had not had sex in the last six months, they were asked to report why and how sexual abstinence affected them.

The length of time since respondents last had sex ranged from 1972 to 1989. Thirty-two (15.6%) of all subjects did not have sex in the last six months (Table 17). Respondents HIV sero-positive were more likely (p<.05) not to have had sex in the last six months compared with subjects who were HIV sero-negative or not tested. Nine of the 14 HIV sero-positive subjects who did not have sex in the last months had been diagnosed as having AIDS.

TABLE 17

SEXUAL ABSTINENCE BY HIV ANTIBODY STATUS
N = 205

SEX IN LAST SIX MONTHS	POSITIVE	NEGATIVE	NOT TESTED	TOTAL
Yes	32 (69.6%)	75 (91.5%)	66 (85.7%)	173 (84.4%)
No	14 (30.4%)	7 (8.5%)	11 (14.3%)	32 (15.6%)
TOTAL	46 (22.4%)	82 (40.0%)	77 (37.6%)	205 (100%)

Reasons for not having sex in the last six months ranked from the highest to lowest frequency were: no partners to have sex with (34.4%), concern of spreading HIV infection to others (25%), haven't felt like having sex (15.6%), afraid of catching AIDS (15.6%), impotent (15.6%) and I don't like sex (6.2%). Other reasons cited by single respondents were: impotent lover, conflict with religious beliefs, just coming out and relationship becoming a friendship rather than sexual. The most common reasons HIV sero-positive subjects did not have sex in the last six months was that they were afraid of spreading AIDS (25%) followed by not feeling like having sex (15%).

Next respondents were asked to report how not having sex affected them. Subjects were asked to circle a response on a five point Likert scale that ranged from strongly agree to strongly disagree if not having sex made them unhappy, was embarrassing to talk about or didn't bother them at all. Ten (31.2%) respondents strongly agreed that not having sex made them unhappy. Seven (21.8%) of those that didn't have sex in the last six months strongly agreed that it was embarrassing to talk about. Eighteen (58.1%) strongly disagreed with the statement that "not having sex doesn't bother me at all". It becomes evident that not having sex is a significant factor in diminished personal happiness.

Alcohol and Drug Use

Subjects reported the use of alcohol and drugs on a five point ordinal scale from never to always. Having sex under the influence of alcohol to some degree (Table 18) occurred in 73.5% of the sample.

TABLE 18

SEX UNDER THE INFLUENCE OF ALCOHOL
N = 204

	FREQUENCY	VALID PERCENT
Never	54	26.5
Seldom	63	30.9
Sometimes	58	28.4
Often	27	13.2
Always	2	1.0
No answer	1	missing
TOTAL	205	100.0

There was not a statistically significant difference (p <.05) between having sex under the influence of alcohol and information about HIV antibody status.

Sex under the influence of drugs was less common in this sample of men than alcohol use (Table 19).

TABLE 19

SEX UNDER THE INFLUENCE OF DRUGS
N = 203

	FREQUENCY	VALID PERCENT
Never	129	63.5
Seldom	23	11.3
Sometimes	35	17.2
Often	14	6.9
Always	2	1.0
No answer	2	missing
TOTAL	205	100.0

There was a statistically significant difference (p <.05)) between drug use and information about HIV antibody status. HIV sero-positive subjects were more likely to have sex under the influence of non-medical drugs compared to subjects not tested.

Sex Practices

The key question in this research project was to determine if there was a relationship between information about HIV antibody status and sex practices. However, the analysis included additional descriptors to provide a more comprehensive profile of the sex practices in this sample of men. First, the sex practices of the whole sample of 205 men are reported to determine if subjects did (including increase, decrease and no change) or did not do each of the 13 sex practices that were described in question 25 and 26 of the survey instrument. The 13 sex practices are then assessed for change by describing an increase, decrease, no change or not practiced for each sex practice. Next, the sex practices are described considering both information about HIV antibody status (positive, negative or not tested) and the partner variable (regular partner, regular partner plus others or no regular partner). The final enquiry was a regression analysis to determine the combined effect of information about HIV antibody status and the extraneous variables described earlier, on the dependent variable, sex practices.

The frequency of specific sex practices of the total sample (Table 20) is arranged in descending order.

TABLE 20

SEX PRACTICES OF TOTAL SAMPLE

SEX PRACTICE	N	FREQUENCY	VALID PERCENT
1. Mutual Masturbation	204	185	90.7
2. Insertive Oral Intercourse (no condom)	203	136	67.0
3. Insertive Anal Intercourse (condom)	204	129	63.0
4. Receptive Oral Intercourse (no condom)	204	128	62.7
5. Receptive Anal Intercourse (condom)	204	122	59.8
6. Insertive Anal Intercourse (no condom)	204	120	58.8
7. Receptive Oral Intercourse (condom)	204	110	53.9
8. Insertive Oral Intercourse (condom)	203	107	52.7
9. Receptive Anal Intercourse (no condom)	204	99	48.5
10. Douche or Enema Before Sex	204	53	26.0
11. Shared Sex Toys	204	27	13.2
12. Insertive Fisting (no glove)	203	13	6.4
13. Receptive Fisting (no glove)	203	10	4.9

Mutual masturbation was the most frequently practiced sexual activity (90.7%) followed by unprotected insertive oral intercourse to ejaculation (67.0%) and protected insertive anal intercourse (63.0%). Unprotected insertive anal intercourse was practiced by proportionately more (58.8%) men in this sample than unprotected receptive anal intercourse (48.5%). Approximately one quarter (26.0%) of subjects used an enema or douche before sex and fewer (13.2%) shared sex toys. Less than 7% of the sample practiced fisting. The frequency of the sex practices described does not reflect the number of times a sex practice is practiced but rather that subjects did it, irrespective of an increase, decrease or no change.

Each sex practice for the total sample of men was assessed for change (Table 21). The time period to assess change for tested subjects was between the time of their first antibody test and the date of completing the questionnaire and for subjects not tested between the summer of 1987 and the date of completing the questionnaire. The safer sex practices of the total sample reflect an increase, specifically in the practices of mutual masturbation and protected oral and anal intercourse. The unsafe practices, unprotected oral and anal intercourse, have decreased. The unsafe sex practice of using an enema or douche before sex reflects a greater increase (8.8%) than decrease (2.0%). A segment of this sample report no change in high risk sex practices including unprotected anal intercourse.

TABLE 21

PERCENT CHANGE IN SEX PRACTICES

SEXUAL PRACTICE	N	INCREASE	DECREASE	NO CHANGE	NOT PRACTICED
A. Mutual Masturbation	204	42.2	6.9	41.7	9.3
B. Insertive Oral (no condom)	203	7.9	40.4	18.7	33.0
C. Insertive Anal (no condom)	204	1.0	44.1	13.7	41.2
D. Insertive Fist (no glove)	203	0.5	4.4	1.5	93.6
E. Receptive Oral (no condom)	204	4.9	40.7	17.2	37.3
F. Receptive Anal (no condom)	204	1.5	36.8	10.3	51.5
G. Receptive Fist (no condom)	203		3.9	1.0	95.1
H. Insertive Oral (condom)	203	22.7	4.4	25.6	47.3
I. Receptive Oral (condom)	204	22.1	4.4	27.5	46.1
J. Insertive Anal (condom)	202	48.0	3.9	11.3	36.8
K. Receptive Anal (condom)	204	43.6	4.4	11.8	40.2
L. Douche or Enema	204	8.8	2.0	15.2	74.0
M. Shared Sex Toys	204	3.9	5.4	3.9	86.8

Subjects who practiced each of the 13 sex practices were compared to determine if there was a statistically significant difference dependent on their being HIV sero-positive, HIV sero-negative or not tested (Table 22). The HIV sero-positive group was further divided into those who have AIDS for purposes of the analysis. Mutual masturbation and shared sex toys were significantly different (p<.05) among the four groups. Mutual masturbation was less commonly practiced by subjects who were HIV sero-positive while the use of sex toys was more common.

TABLE 22

SEX PRACTICES BY HIV ANTIBODY STATUS

SEXUAL PRACTICE	N	AIDS	POSITIVE	NEGATIVE	NOT TESTED
A. Mutual Masturbation *	185	13 (68.4)	24 (88.9)	78 (95.1)	70 (92.1)
B. Insertive Oral (no condom)	136	9 (47.4)	16 (59.3)	57 (69.5)	54 (72.0)
C. Insertive Anal (no condom)	120	9 (47.4)	16 (59.3)	51 (62.2)	44 (57.9)
D. Insertive Fist (no glove)	13		2 (07.4)	4 (04.9)	7 (09.2)
E. Receptive Oral (no condom)	128	11 (57.9)	16 (59.3)	53 (64.6)	48 (63.2)
F. Receptive Anal (no condom)	99	12 (63.2)	17 (63.0)	34 (41.5)	36 (47.4)
G. Receptive Fist (no glove)	10		2 (07.4)	2 (02.5)	6 (07.9)
H. Insertive Oral (condom)	107	11 (57.9)	13 (48.1)	46 (56.8)	37 (48.7)
I. Receptive Oral (condom)	110	11 (57.9)	15 (55.6)	48 (58.5)	36 (47.4)
J. Insertive Anal (condom)	129	10 (52.6)	16 (59.3)	55 (67.1)	48 (63.2)
K. Receptive Anal (condom)	122	11 (57.9)	20 (74.1)	48 (58.5)	43 56.6)
L. Douche on Enema	53	4 (21.1)	9 (33.3)	19 (23.2)	21 (27.6)
M. Shared Sex Toys *	27	3 (15.8)	8 (29.6)	4 (04.9)	12 (15.8)

* statistically significant p = <.05

Change in sex practices depending on information about HIV antibody status was minimal. However, whether the subjects had a regular partner or not also affected sex practices. Therefore, all sex practices were analyzed by the regular partner variable. The HIV antibody status of the respondent's sex partner was not known.

There was a statistically significant difference (P<.05) on four of the 13 sex practices depending upon the subject having a regular partner. Respondents were grouped into two categories: those with a regular partner and those who had no regular partner or a regular partner plus others. The four sex practices that were statistically significant by the regular partner variable were unprotected insertive and receptive oral intercourse and unprotected insertive and receptive anal intercourse. The four tables that follow will illustrate that the decrease in these unsafe sex practices was greatest in those who report no regular partner or regular partner plus others. Subjects who have a regular partner report a greater number in the "no change" category for all of the four sex practices.

TABLE 23

UNPROTECTED INSERTIVE ORAL INTERCOURSE

VARIABLE BY TYPE OF PARTNER

PERCENT CHANGE	REGULAR PARTNER	NO REGULAR PARTNER REGULAR PARTNER PLUS OTHERS	TOTAL
Increase	13.2	6.1	8.0
Decrease	24.5	45.9	40.3
No Change	34.0	13.5	18.9
Not Practiced	28.3	35.4	32.8
TOTAL	26.4	73.6	100.0

TABLE 24

UNPROTECTED RECEPTIVE ORAL INTERCOURSE

VARIABLE BY TYPE OF PARTNER

PERCENT CHANGE	REGULAR PARTNER	NO REGULAR PARTNER REGULAR PARTNER PLUS OTHERS	TOTAL
Increase	5.7	4.7	5.0
Decrease	24.5	46.3	40.6
No Change	32.1	11.4	16.8
Not Practiced	37.7	37.6	37.6
TOTAL	26.2	73.8	100.0

TABLE 25

UNPROTECTED INSERTIVE ANAL INTERCOURSE

VARIABLE BY TYPE OF PARTNER

PERCENT CHANGE	REGULAR PARTNER	NO REGULAR PARTNER REGULAR PARTNER PLUS OTHERS	TOTAL
Increase	1.9	0.7	1.0
Decrease	35.8	47.7	44.6
No Change	26.4	9.4	183.9
Not Practiced	35.8	42.3	40.6
TOTAL	26.2	73.8	100.0

TABLE 26

UNPROTECTED RECEPTIVE ANAL INTERCOURSE VARIABLE BY TYPE OF PARTNER

PERCENT CHANGE	REGULAR PARTNER	NO REGULAR PARTNER REGULAR PARTNER PLUS OTHERS	TOTAL
Increase	1.9	1.3	1.5
Decrease	30.2	39.6	37.1
No Change	26.4	4.7	10.4
Not Practiced	41.5	54.4	51.0
TOTAL	26.2	73.8	100.0

Predictors of Sexual Practice

The creation of the practice index, described earlier, allowed for a composite measure of risk for each subject on an additive scale regarding the 13 sex practices included in this study. The practice index provided for a gradation of risk activity on a scale from 0 to 37. Although the scale is arbitrary and not based on number of times a particular item is practiced, it did provide an overall measure of risk. Since reliabilities of greater than .80 are considered acceptable in research (Carmines & Zeller, 1979) and the reliability of the practice index was .82, it was utilized for a further analysis of sexual behaviour.

The overall mean in the total study sample on the practice scale was 15.3. There was not a statistically significant difference among the three groups (sero-positive, sero-negative and not tested) and the practice index. Four subjects scored 37 on the practice scale and an additional 10 scored between 30 and 36. The 14 subjects who scored between 30 and 37 were assessed to determine if a profile emerged that was different from the characteristics of the total sample. The variables included in this evaluation were: HIV antibody status, regular partner, drug use, group sex, age, education, occupation and income. Four of the 14 respondents were HIV sero-positive (one with AIDS), seven were not tested and three were HIV sero-negative. Three reported having a regular partner, three had sex with their regular partner plus others and eight had no regular partner. The average age was 33.4 years compared to 33.8 for the total sample. The remaining variables were similar to the characteristics of the total sample. Thus, there were no identifiable characteristics to differentiate respondents who scored high on the practice index compared with the total sample of men.

Pearson correlation coefficients were computed between the sex practice index and selected variables in this study to explore associations among them. Only variables measured on ordinal or interval scales were included in these measures of association. The following variables were correlated with the sex practice index: chance of contracting AIDS, general knowledge of AIDS (knowledge index), safer sex knowledge (safe test index), drug and alcohol use, number of lifetime partners, age, education, occupation and income. The logarithm and square of variables were calculated in the event that the relationship was nonlinear. Statistically significant ($p<.05$) positive correlations were obtained for years of education ($r = .11$), drugs ($r = .18$), alcohol ($r = .14$) and logarithm of number of lifetime partners ($r = .16$). Sex under the influence of alcohol and drugs was combined to create a substance variable ($r = .19$). Therefore, subjects reporting a greater number of lifetime partners, more years of education and higher use of alcohol and drugs were associated with a higher scale on the practice index. Because all correlations were small ($<.20$), a large amount of variance between the variables was unaccounted for. These correlations do not demonstrate cause and effect because other factors not included in this study may affect the relationship between variables.

A multiple linear regression analysis was utilized to measure the relationship between the practice index and several independent variables. Only variables that were significantly correlated with the practice index in previous statistical tests were included in the regression analysis. Entering years of education, logarithm of number of lifetime partners and the substance abuse variable in the regression equation yielded a shared variance of 6% with the practice index. Only the substance abuse variable contributed significantly when entered in a stepwise procedure. The relatively low explained variance in this multivariate analysis technique indicates there was not enough variation in the independent variables because the sample was fairly homogeneous compared to the normal population. Although the development of a model consisting of interrelated variables for predicting unsafe sex practices is important, it is beyond the scope of this study.

Serendipitous Finding

The association between alcohol and drug use and fisting was assessed. The t-test was utilized to analyze the difference between the means of reported alcohol or drug use and subjects who did or did not engage in fisting. Subjects who reported a greater use of alcohol and drugs during sex were more likely ($p<.05$) to practice fisting.

Knowledge and Experience by Respondent Characteristics

Year First Heard About AIDS

Approximately one third (33.7%) of the subjects first heard about AIDS in 1982, the year of the first reported case of AIDS in Alberta. By 1984, 76.7% of the sample became aware of AIDS and by 1988 all subjects had heard about AIDS. Subjects in this sample, therefore, may have placed themselves at risk of contacting HIV infection because they lacked an awareness of AIDS at a time when the epidemic was occurring.

Chance of Developing AIDS

Subjects were asked to report their perception of a person's risk of contracting AIDS in the Edmonton gay community on a scale from 0 to 100 per cent. Approximately half of the sample (49%) perceived the risk to be 30% or less. The reported range was from 0% to 80% chance of contracting AIDS. There was a statistically significant ($p<.05$) difference between the group mean of HIV sero-positive subjects and the means of both the sero-negative and not tested groups reporting their perceived chance of contracting AIDS. The reported mean of HIV sero-positive subjects (46.7%) was ranked as highest, descending to subjects HIV sero-negative (36%) and not tested (32.9%).

Eight subjects commented in the margin of the questionnaire indicating difficulty interpreting question 35 of the survey instrument. The question was intended to measure the perceived risk of contracting HIV infection for the overall membership of the Edmonton gay community; however, one subject's statement summed the ambiguity of this question for the eight respondents.

> *This would depend on each person's behaviour and attitude, therefore, it is different for everyone that I know.*

Although an increased perceived risk of contracting AIDS is believed to increase safer sex practices, it was not supported by findings in this study. Subjects HIV sero-positive perceived the highest risk of contracting AIDS, but the presence of HIV infection is a frequent manifestation of past unsafe sex practices.

Friends or Lovers with AIDS

Subjects were asked if they had friends or lovers with AIDS and if they had friends or lovers that had died of AIDS. Approximately three-quarters (74.6%) of the respondents indicated they had friends with AIDS and 9.3% had lovers with AIDS. One quarter (23.9%) of subjects had neither friends nor lovers with AIDS. Subjects HIV sero-positive reported the greatest proportion (52.6%) of having had a lover with AIDS compared to 36.8% of the sero-negative and 10.5% of those not tested. However, 38.6% of those who had friends with AIDS were sero-negative, 36.6% were not tested and 24.8% were sero-positive.

Approximately two-thirds (67.6%) of the respondents had friends die of AIDS and 4.4% had lovers die of AIDS. One third (32.2%) of the subjects had neither friends nor lovers die of AIDS. Proportionately more respondents who reported having lovers die of AIDS were HIV sero-positive (Table 27). HIV antibody positive subjects reported the smallest proportion (4.9%) having no friends or lovers die of AIDS compared to 12.3% of subjects not tested and 15.2% HIV sero-negative.

TABLE 27

FRIENDS OR LOVERS DIE OF AIDS BY STATUS
N = 204

STATUS

	POSITIVE	NEGATIVE	NOT TESTED	TOTAL
Friends Die of AIDS	35 (17.2%)	51 (25%)	52 (25.5%)	138 (67.6%)
Lovers Die of AIDS	6 (2.9%)	2 (1.0%)	1 (0.5%)	9 (4.4%)
No Friends or Lovers Die of AIDS	10 (4.9%)	31 (15.2%)	25 (12.3%)	66 (32.4%)

General Knowledge of AIDS (Knowledge Index)

Subjects were asked seven general knowledge questions concerning AIDS as contained in question 29,30,31,32 and 34 of the survey instrument. The proportion of respondents who gave a correct answer for each question varied from 42% to 94% (Table 28). Approximately half (48.3%) of the respondents had 5 or more of the 7 (71.4%) questions correct. A perfect score, 7 of 7 or 100% was obtained by 43 (21%) of the subjects. One subject reported incorrect answers to all questions. There was not a statistically significant difference among the three groups (positive, negative and not tested) and knowledge (on each question and all questions combined).

TABLE 28

RESPONDENTS' GENERAL KNOWLEDGE OF AIDS
N =205

QUESTION	% CORRECT
29	64%
30	87%
31	94%
32	42%
34a	84%
34b	75%
34c	80%

Safer Sex Knowledge (Safe Test Index)

Subjects were asked to evaluate each of 13 practices as more or less safe with regard to the transmission of HIV as elicited by question 33 of the survey instrument (Table 29). Correct responses for each of the 13 sex practices varied from 35% to 98% with a mean of 87%. Four respondents indicated in the margin of the questionnaire that each practice needed a standard of comparison to evaluate the practice as more or less safe.

TABLE 29

RESPONDENTS' SAFER SEX KNOWLEDGE

SEX PRACTICE	%MORE SAFE	%LESS SAFE	% DON'T KNOW	% NO ANSWER
A. You engaged in mutual masturbation until your partner ejaculated ("came") without a condom.	85.9	12.7	0.5	1.0
B. You ejaculated ("came") in his mouth without a condom.	14.6	83.4	1.0	1.0
C. You ejaculated ("came") in his anus without a condom.	2.0	96.6	0.5	1.0
D. You put your whole hand or fist into his anus without a glove.	8.3	88.3	0.5	2.9
E. He ejaculated ("came") in your mouth without a condom.	14.1	83.9	1.0	1.0
F. He ejaculated ("came") in your anus without a condom.	1.0	98.0	0.5	0.5
G. He put his whole hand or fist into your anus without a glove.	7.3	89.3	0.5	2.9
H. You wore a condom when you inserted your penis in his mouth.	96.6	2.0		1.5
I. He wore a condom when he inserted his penis in your mouth.	96.6	2.0		1.5
J. You wore a condom when you inserted your penis into his anus.	93.2	5.9		1.0
K. He wore a condom when he inserted his penis into your anus.	93.7	5.4		1.0
L. You used a douche or had an enema before having sex.	52.7	35.6	2.9	8.8
M. You shared sex toys with your partner.	8.3	87.3		4.4

Each sex practice was evaluated as correct, based on the CAS (1988) safer sex standards, by approximately 83% or more of respondents with the exclusion of the use of an enema or douche before sex. More than half (52.7%) of the respondents who answered this question regarded this practice as more safe. This practice also had the greatest number in the I don't know (2.9%) and no answer (8.8%) category. Comments offered in the margin of the questionnaire regarding the use of an enema or douche before sex included the following:

I don't see what difference it would make.

It has nothing to do with it as far as I'm concerned.

Actually, I wouldn't have thought this makes a difference.

No difference.

Does it really make a difference, I think not.

It would probably make you more receptive.

Approximately 8% of the respondents considered sharing sex toys as a more safe sex practice. Two subjects offered that they had insufficient information to evaluate this practice as more or less safe:

Depends on if and how you clean them between use;not enough information to answer the question. If not cleaned the answer is less safe.

Depends on what type really, dildos - less safe, vibrators not inserted - more safe.

Unprotected oral intercourse was evaluated to be more safe compared to unprotected anal intercourse. Approximately 14% of respondents reported unprotected oral intercourse to ejaculation as a more safe sex practice. Less than 2% of respondents reported unprotected anal intercourse as a safer sex practice. A slightly higher proportion of subjects (2%) reported unprotected insertive anal intercourse as more safe compared to 1% for receptive anal intercourse. Oral and anal intercourse with a condom were evaluated as more safe by 93% or more of the respondents.

There was a statistically significant difference ($p < .05$) in knowledge concerning three of the thirteen safer sex practices depending on information about HIV antibody status. Subjects HIV sero-positive reported a higher proportion in the less safe category regarding the practices of receptive fisting and protected insertive and receptive oral intercourse compared to subjects HIV sero-negative or not tested.

A statistically significant difference existed between safer sex knowledge and the unsafe sex practice of using a douche or enema before sex. A cross-tabulation of safer sex knowledge with the use of an enema or douche before sex indicates that proportionately more subjects who incorrectly view this practice as more safe actually practice it (Table 30). Although the CAS (1988) regards the use of a douche or an enema before sex as an unsafe sex practice, the majority of men in this study sample have not acquired this knowledge.

TABLE 30

DOUCHE OR ENEMA BEFORE SEX

BY SAFER SEX KNOWLEDGE
N =186

KNOWLEDGE	% DO NOT PRACTICE	% DO PRACTICE	TOTAL
More safe	51.5	75.0	58.1
less safe	44.8	23.1	38.7
Don't Know	03.7	01.9	03.2
TOTAL	72.0	28.0	100.0

HIV Antibody Testing

Pretest Counselling. More than half (57.4%) of the 129 respondents who had an HIV antibody test did not receive pretest counselling. Physicians counselled 48 (87.2%) of the 55 subjects who received pretest counselling, nurses counselled 7 (12.7%) and others counselled 7 (12.7%). Pretest counselling described under "other" were: friends (4), volunteer worker (l), STD Clinic staff (1) and reading in the newspaper that some treatments are effective before AIDS develops (l).

Posttest Counselling. Half (50.4%) of the 129 respondents that had an HIV antibody test received posttest counselling. Physicians counselled 60 (92.3%) of the 65 respondents that had posttest counselling and nurses counselled 5 (7.7%). Twenty-one HIV sero-positive subjects did not receive posttest counselling.

Notification of Test Result. Subjects reported how they were notified of their HIV antibody test result (Table 31). A life insurance company notified one respondent of his HIV antibody test by telephone.

Two HIV sero-positive subjects indicated the HIV antibody test was taken without their permission:

> *The test was taken without my knowledge or approval. My only symptom was a sore throat and that I was gay.*
>
> *The results of this test came as a complete surprise. I was not made aware that I was having an HIV test. I was very upset and feel that it was totally unnecessary.*

TABLE 31

HIV ANTIBODY TEST RESULT: METHOD OF NOTIFICATION
N = 129

METHOD	FREQUENCY	VALID PERCENT
In person by a doctor	93	72.1
By telephone	27	20.9
In person by a nurse	4	3.1
Mail	3	2.3
Red Cross	1	0.8
Did not want to know	1	0.8
TOTAL	129	100.0

Request for More Information. One third (32.8%) of the 128 subjects who had been informed of their HIV antibody status wanted more information than was given at the time of their first HIV antibody test result. Twenty-one of 46 (45.7%) HIV sero-positive subjects and 21 of 82 (25.6%) HIV sero-negative subjects requested more information than was given. The information requested or concerns subjects expressed were categorized by themes that emerged from the data: information about AIDS, HIV antibody test, safer sex and personal issues. Thirty-seven of the 42 subjects (88%) who wanted more information explained the nature of this request.

Information About AIDS. Eleven of 37 (29.7%) of subjects requested more information about AIDS that included: how it affects the immune system, progression of illness, per cent that go on to develop AIDS and the difference between HIV infection and AIDS. One HIV sero-negative subject commented,

> *All I heard was gay men were getting a disease, I wanted to know how and why.*

HIV Antibody Test. Ten of 37 (27.0%) wanted more information about the HIV antibody test, particularly detailed and accurate information about test accuracy. Other issues raised were: what the test means in relation to HIV infection, what positive means and implications of the test result.

Safer Sex. Nine of 37 (24.3%) subjects requested safer sex information: more complete information on safer sex , safe ways to enjoy sex with other partners and the risk of infecting partners. One HIV sero-negative subject offered the following:

> *I needed more specifics on the dangers of particular sexual activities, a lot of information is wielded on the premise of guilt, as an intimate sexual being, this feeds resentment.*

Personal Issues. A greater number of HIV sero-positive (9) than HIV sero-negative (2) subjects had counselling requests that were personal to the respondents' needs. Both the impact of a positive HIV antibody test result and a lack of assertiveness may influence the counselling process as reflected by the comments of two subjects:

> *As is probably the case with a possible fatal disease my first reaction was shock and then the immediate feeling of disbelief, then to get out of there and think alone.*
>
> *Very limited [knowledge] and because of my naivety was afraid and felt uncomfortable initiating any myself.*

Others expressed concerns related to lifestyle changes that were necessary, how long they had to live, how to tell their lover, how to tell others and where to go for counselling and mental support. One HIV antibody positive subject expressed a health versus illness concern.

I needed to know that I was still well; a broader analysis of my health.

Discrimination. Twenty-one (16.7%) of subjects who were aware of their HIV antibody status reported discriminatory practices (two of 128 subjects aware of their HIV antibody status did not answer the question). There was a statistically significant difference ($p < .05$) between subjects HIV sero-positive and HIV sero-negative (Table 32). A greater proportion of HIV sero-positive subjects (28.9%) perceived they had been discriminated against compared with 9.9% who were HIV sero-negative.

TABLE 32

HIV ANTIBODY STATUS BY DISCRIMINATION
N =126

DISCRIMINATION	NEGATIVE	POSITIVE	TOTAL
Yes	8 (9.9%)	13 (28.9%)	21 (16.7%)
No	73 (90.1%)	32 (71.7%)	105 (83.3%)
TOTAL	81 (64.3%)	45 (35.7%)	126 (100.0%)

The specific forms of discrimination are divided by responses from subjects HIV sero-negative and HIV sero-positive because of differences in the data.

HIV Sero-positive. Nine forms of discrimination were reported by subjects HIV antibody positive.

- *extraordinary infection control measures*
- *not allowed to see my children*
- *discrimination by co-workers*
- *fired from my job*
- *estranged from my family*
- *my friends telling people I don't know well that I have AIDS*
- *dentist wouldn't treat me*
- *my original doctor washed his hands of me*
- *by my lover (our relationship deteriorated seriously when he found out I was positive and never recovered).*

HIV Sero-negative. Two broad themes emerged from the data reported by HIV antibody negative subjects: first, those pertaining to life insurance and second, the stigma of being gay and having had an HIV antibody test.

Stigma.

> *Being tested, even with a negative result, people distant - herd themselves alone. I may be one of "The Contaminated".*
>
> *The enormous concerns about the test and being gay is a form of discrimination itself--no?*
>
> *Not by ~~my~~ status, but by my lover's. Some friends have pulled back. At work there are rumours I have AIDS.*
>
> *Even though I tested negative they tried to dissuade me from being tested. They told me that since I am gay (they tell us all this) I should simply assume a positive status. What do they do when a straight person walks in?*

Life Insurance.

Insurance was refused pending a negative status.

On a life insurance form it asks "Have you ever been tested for AIDS?" If the answer were to be yes there was [sic] a lot more questions irrelevant to the situation and an invasion of privacy.

Subjects' Responses After Learning Test Result. Subjects were asked what they did when they learned of their HIV antibody status. A total of 114 subjects of 128 aware of their HIV antibody status provided a comment. Responses offered by the 45 HIV sero-positive subjects and 69 HIV sero-negative subjects were analyzed separately. The frequency for each response is reported.

HIV Sero-positive

- sought support from friends (10), lovers (3), brothers and/or sisters (2)
- felt upset, cried alone (10)
- contacted the AIDS Network or AIDS hotline (6)
- became depressed, reclusive, withdrawn or celibate (6)
- felt scared or anxious (6)
- drank or did drugs (4)
- contemplated suicide (3)
- accepted it and tried to be positive (2)
- doubted test result (2)
- tried to ignore it by working harder or travelling (2)
- *did nothing (1)*
- *sought advice from a doctor (1)*
- *told my previous sex partners and those I shared needles with (1)*

- *went to a hospital emergency department and was admitted for one week (1)*
- *sought psychiatric counselling (1)*
- *prayed (1)*

HIV Sero-negative

- felt a great sense of relief (30)
- continued to practice safer sex (14)
- did nothing special (11)
- changed to safer sex practices (6)
- treated themselves to dinner (2)
- *decided not to drink excessively before I go home with someone (1)*
- *decided to live life differently, joined a club, went on a holiday and spent lots of money (1)*
- *gave more thought to my gay lifestyle (1)*
- *stopped worrying (1)*
- *stopped having sex for four weeks (1)*
- *angry because my lover of 13 years has tested positive. I hurt for him immensely (1)*
- *got drunk (1)*
- *went skating with a stupidest grin on my face (1)*

CHAPTER VI

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

Conclusions and Implications

The purpose of this study was to determine if there was a relationship between information about HIV antibody status and sex practices. While a number of studies outlined in Chapter II have reported that HIV sero-positive men practice safer sex to the greatest degree when compared with men HIV sero-negative or not tested, these results were only partially supported by this study. In the discussion that follows, conclusions will be drawn from the results of the data analysis and where possible, implications for nursing, related health care personnel and the gay community will be incorporated into the discussion. Conclusions are organized under the headings of sexual behaviour and counselling.

Sexual Behaviour

1. Only two of 13 sex practices were significantly different in subjects HIV sero-positive, sero-negative and not tested. HIV sero-positive subjects practiced mutual masturbation less frequently than subjects HIV sero-negative or not tested and reported a higher use of sex toys. Because 27 men in this sample shared sex toys (13 HIV sero-positive) more detail in safer sex information is required. Shared insertive devices are rated as high risk by the CAS (1988) for the transmission of the HIV. Shared sex toys promote HIV transmission in two ways. First, by causing trauma to the anus which may promote HIV transmission when exposed to ejaculate and second, by the device serving as a vehicle in transmitting HIV infected body fluids. Safer sex literature should contain information on methods to reduce rectal trauma and sufficient detail on effective cleaning methods of shared sex toys.

2. More than half (58.8%) of the subjects in this study reported insertive anal intercourse without a condom. This calculation is not based on number of times this sex practice was performed. While the message of condom use is central to AIDS education, it may not be directed at the sex practices of gay men. For example, condoms for anal intercourse require greater strength than those intended for vaginal intercourse (CAS, 1988). It is difficult to purchase condoms designed for anal intercourse in Edmonton. Gay men have indicated they prefer condoms with a natural appearance (Wigersma & Oud, 1987), but many Edmonton condom promotion campaigns distribute condoms that are coloured yellow, blue, red and green. In addition many Edmonton retail outlets sell condoms coated with nonoxynol-9, a chemical that is not recommended for anal intercourse (CAS, 1988). The prohibitive cost of condoms was reported by one subject in this study.

   > *Whilst it is known that condoms are a part of the practice of safer sex, the cost of condoms is almost prohibitive for those individuals in the lower income bracket. Seemingly there is a good profit to be made from this AIDS epidemic. Corporations make profit whilst taxpayers will pay the hospital costs.*

3. Analysis for change in sex practices indicated that this sample of men have increased safer sex practices, excluding the use of an enema or douche before sex. Subjects reported a knowledge deficit regarding the use of an enema or douche before sex as an unsafe sex practice. Because douches or enemas may irritate the rectal mucosa, this practice may facilitate HIV transmission if followed by unprotected intercourse (CAS, 1988). Safer sex education should, therefore, include information concerning the risk of an enema or douche before sex for acquiring HIV infection.

4. Oral intercourse to ejaculation without a condom was practiced by more than 60 per cent of

subjects. Answers to safer sex knowledge questions indicated that 14% of the subjects reported this practice as "more safe". While the CAS (1988) reports receptive fellatio with ingestion of ejaculate as posing minimal risk for acquiring HIV, there is some evidence of conflicting messages regarding the degree of risk posed by this practice. For example, a pamphlet on oral sex published by the AIDS Committee of Toronto (1988) contains the following :

> Sucking...It's safer than we thought. Here's why: you can only catch HIV if it gets into your bloodstream. It's not easy to get it into your bloodstream inside your mouth.... It's not impossible to catch HIV from sucking - it's very, very unlikely.

One subject from this sample of men reflects his interpretation of the risk of oral sex when describing his sex practices:

> *Only swallowing cum has increased since it has been acknowledged that this activity is safer than previously believed.*

While safer sex recommendations change with new epidemiologic studies of HIV infection, a standardized safer sex message may assist gay men to minimize the risk of acquiring HIV through their sex practices.

5. Protected receptive anal intercourse was practiced by 49% of the subjects in this study and 94% reported it as a "more safe sex" practice. The CAS (1988) reports protected receptive anal intercourse as a low risk activity; therefore, the risk is still substantial. Factors contributing to condom acceptance or failure were not evaluated by this study. Considering the high rate of protected anal intercourse reported by respondents, all AIDS prevention

programs targeted for gay men should contain detailed instructions on proper condom use. For example, because of the mechanical stresses of anal intercourse, the failure rate of condoms for anal intercourse is higher than for vaginal intercourse. Extra thickness offers additional protection against breakage but reduces sensation. Liberal water-based lubricant is advised for anal penetration and the use of oil or grease should be avoided. Although anal intercourse with a condom reduces the risk of HIV transmission, the risk is still significant (Green, 1989).

6. Approximately six percent of the sample practice fisting without a glove. Men who reported a higher use of alcohol or drugs were more likely to practice fisting. Although fisting in itself is not an efficient means of HIV transmission, it is the exposure to ejaculate that may follow that poses the risk. Fisting causes trauma to the anal area facilitating transmission of the HIV. Because of possible rectal trauma, fisting should be included in safer sex counselling for those at risk.

7. Although not anticipated at the outset of the study, the type of partner (regular or "casual") was related to a greater number of sex practices than information about HIV antibody status. Subjects with "casual" partners reported a greater increase in protected oral and anal intercourse when compared to subjects with regular partners. An overall measure of risk by the practice index indicated that men with more lifetime partners, greater use of alcohol and drugs and more years of education scored higher on the practice index indicating a lower compliance with safer sex practices. Subjects HIV sero-positive, however, reported fewer years of education compared to subjects HIV sero-negative or not tested. The discrepancy in these findings cannot be explained. Perhaps men who completed more years of education

have more opportunity for finding sex partners. Subjects with a higher number of lifetime partners also scored higher on the practice index indicating more sexual activity on a broader range of sex practices. The association between alcohol and drug use and high risk sex practices has been documented (Stall, McKusick, Wiley, Coates & Ostrow, 1986). Health education efforts to prevent HIV infection should communicate the relationship between alcohol and drug use and noncompliance with safer sex.

8. Slightly less than half of the 46 HIV sero-positive subjects reported they did not have sex in the last six months. Next to no available partners to have sex with, the second most common reason for not having sex in the last six months cited by 25% of HIV sero-positive subjects, was the fear of spreading HIV infection to others. The concern of stopping the spread of HIV by sexual abstinence reflects the conviction of HIV sero-positive subjects to protect other human beings from possible harm. The personal cost of sexual abstinence was expressed by an HIV sero-positive subject.

> *My attitudes towards myself and sex have changed markedly over the past two years. After having tested positive, I thought of myself as being contaminated. When I did give into my sexual urges, I only engaged in mutual masturbation, with little or no body contact. I was so afraid I would infect others.*

Celibacy may result from fear of disclosing a homosexual orientation because of fear of societal condemnation (Batchelor, 1984; Henckin, 1984; Kituse, 1980; Warren, 1980). "Closet passing" as normal contributes to feelings of isolation, low self esteem and a negative gay identify (Herek, 1984; Hertick & Martin, 1987; Kus, 1985; Martin, 1982). A comment from a subject who had not had an HIV antibody test expressed the effect of celibacy.

> *I have essentially been celibate since 1984. The psychological cost of this self-imposed abstinence has been great. The lack of intimacy and its attendant loneliness are a harsh*

> *reality and has resulted in considerable anxiety to someone who because of job related discrimination, chose not to come out until I was 30.*

An important health promotion implication for gay men is to remain sex positive and gay affirmative while upholding the principles of safer sex. Reduced sexual pleasure or sexual dysfunction may result from a fear of transmitting HIV to partners or a lowered self esteem. "Spectatoring", the process of worrying during sexual encounters to the point of decreasing pleasure and creating actual dysfunction, frequently develops in response to sexually experienced anxiety (Harowski, 1987). Open communication with gay men may lead to recognition of sexual concerns that may be alleviated by counselling. Relaying detailed safer sex information will assist gay men to enjoy sex safely and meet intimacy needs (Kus, 1987). In addition, it may be useful to develop imaginative ways of meeting sexual needs without creating the risk of transmitting HIV such as techniques to eroticize safer sex (Palacios-Jimenez & Shernoff, 1986). The benefit of erotic safer sex practices was conveyed by one respondent.

> *I am a healthy male, HIV status unknown, involved in a monogamous, long-term committed lifetime relationship with an HIV positive partner entering his fifth year after diagnosis. The threat of AIDS, to me, is no reason not to love. Safer and erotic sex practices are observed; our sex life together is mutually satisfying and fulfilling because it is motivated by the right reasons: Love and respect!*

9. Not all HIV sero-positive subjects reported responsible sexual behaviour as portrayed by the following example.

> *Yes--I am a sex maniac and do not tell people I am HIV positive. Not even my lover knows.*

The reason(s) for exhibiting irresponsible sexual behaviour was not explored by this study. Once denial of HIV infection is discovered the heatlh care worker may be able to initiate remedial therapy.

10. There was an indication that HIV sero-positive subjects choose partners with the same HIV antibody status.

    > *For myself - all my friends have tested positive for AIDS and I have sex with some (few) of these people because I feel more comfortable with that.*

The issue of safer sex between HIV sero-positive partners raises an important topic for counselling. Safer sex between HIV sero-positive partners it is recommended for the following reasons: a) extra doses of the virus may speed the progress of HIV infection; b) to prevent the risk of contracting other sexually transmitted diseases; and c) one partner may be infected with a variant strain of HIV (Goedert, 1987; Green, 1989). These recommendations have not been supported by solid scientific evidence.

11. Sample recruitment for this study was focussed on gay locations, but 13% of the sample reported having sex with both men and women. Five bisexual subjects were HIV antibody positive. Bisexuality and intravenous drug use will facilitate spread into the heterosexual population. Approximately one third of the sample reported having sex under the influence of non-medical drugs (intravenous use not specified). Safer sex with women and reduced risk injection practices are essential components of preventive counselling. Edmonton's needle exchange program (initiated in 1989) for intravenous drug users is another strategy for reducing the transmission of blood borne pathogens, including the HIV.

12. This study did not determine the number of subjects that were paid for sex but one HIV sero-positive subject offered the following information in response to an open ended question.

    > *I've been a male prostitute for 7 years off and on, 4 years full time. I'm an intravenous drug user and have been since 15 years. I was a hard core junkie for about 2 years.*

This is how I feel I came into contact with the virus.

Counselling

Several issues concerning HIV antibody testing were identified by the responses from subjects in this study. More than half of the 129 subjects that had an HIV antibody test did not receive pretest counselling and half did not receive posttest counselling. An obvious inconguity exists in Alberta, because only physicians can request an HIV antibody test, and counselling is not contained in the normal fee schedule for Alberta physicians. Information requested by subjects such as information about AIDS, the meaning of the test in relation to HIV infection and safer sex information could be fulfilled by public health nurses who are already familiar with communicable disease counselling. In addition, the Edmonton AIDS Network routinely provides counselling for the informational requests reported by subjects in this study.

The role of individual counselling on safer sex behaviour was reported in a recent New Zealand study of 159 gay men (Robert & Rosser, 1990). Subjects were randomly assigned to one of five AIDS education strategies: watching a video on AIDS, individual counselling for HIV, a group safer sex program, an eroticizing safer sex group and a control group who did not receive any intervention at the time of the study. The authors reported, "The trend showing individual counselling to be more efficacious suggests that qualities such as flexibility, focussing on client issues and providing a confidential arena in which to discuss a person's sexual behaviour and sexuality best promote behaviour change" (p.305). Because HIV seropositivity is not reportable to public health authorities in Alberta, the opportunity to counsel HIV sero-positive individuals by usual methods does not exist.

Responding to HIV infection like any other communicable disease would serve two purposes. First, it would connect HIV sero-positive individuals to public health officials and thereby serve as a mechanism to fulfil the informational requests reported by subjects in this investigation. Second, it would serve to ameliorate the stigmatization of AIDS created by isolating HIV infection as separate from the routines developed in the follow-up of other sexually transmitted diseases. Individual counselling of HIV infected persons by public health officials may serve to narrow the gap between services the health care system provides and the educational needs identified by subjects in this study.

In addition to the high proportion of HIV antibody tested subjects not receiving counselling, a number of subjects communicated that the information received was confusing and over generalized.

> *Basically for being a newly arrived Edmontonian, the information I have an understanding on is very basic and very general - I would like to see more detailed information available. Even though I practice safe sex to the best of my knowledge - I am aware that I still may contract AIDS. It only takes one mistake!*
>
> *I am ignorant about the disease, how one may or may not contract it, the incubation period, the likelihood of developing AIDS once infected and should one be tested.*
>
> *More info [sic] as to what one can do and can't. What restrictions.*
>
> *I wanted more information regarding transmission.*
>
> *Wanted information on how it's spread and how to avoid spreading it.*
>
> *Wanted better or more complete information on safe sex and the different manner one could come into contact with AIDS.*

The conclusions drawn from the results of this study have raised important implications for health care providers and the gay community in designing AIDS prevention strategies in Edmonton .

Both the analysis of sexual behaviours and counselling pertaining to the HIV antibody test have delineated measures that would assist in the prevention of HIV infection and the promotion of health for gay men. The results of this study, however, must be interpreted with caution because of recognized limitations.

Limitations of the Study

1. **Sample selection**. The nonprobability sampling method for this study serves as a major limitation to external validity and thus, to the generalizability of findings. Sample representativeness may have been reduced by a selection bias. Subjects who volunteered to participate in the study may be different from gay men who did not. Although subjects were recruited from a wide range of community locations, the "closeted" homosexual may have been omitted by this method of sample selection. It has also been reported that the more sexually experienced and exclusively homosexual male is more likely to participate in studies of sexual behaviour (Robert & Rosser, 1990). Because the questionnaire required reading skills and a written response, it may have attracted subjects with a higher level of education. Lastly, many questions pertained to sensitive topics, including information about sex practices and HIV antibody status, that may have excluded men who were concerned about their anonymity.

2. **Response Bias.** The behaviour reported by this sample of men may not be representative of the gay population. Difficulty in validating self-reported sexual behaviour may include the tendency to report sexual behaviour that is perceived as socially acceptable.

3. **Recall Bias.** Memory decay may have affected the ability of subjects to reliably recall and

report their personal sex practices. Despite this, questionnaire test-retest procedures and measures of internal consistency were good.

4. **Measures of Change in Sex Practices.** Homosexual practices have been changing since the AIDS epidemic began in 1982; therefore, change attributed to knowledge of HIV sero-status may have occurred prior to the time of the HIV antibody test. The dependent variable (sex practices) may have changed before the independent variable (information about HIV antibody status). As well, competing variables not included in the study may produce a change in sex practices in addition to information about HIV status.

5. **Generalizability to Other Geographic Areas.** The findings from this study may not be generalizable to areas with a high prevalence of AIDS because sex practices and other risk factors for HIV infection may vary by geographic region. For example, gay men from small cities in the United States reported a greater degree of high risk sexual behaviour compared to gay men from large cities (Kelly, 1990).

Recommendations for Further Study

All studies involving gay populations lack an important denominator, the incidence of homosexuality and bisexuality in the general population. Since 87% of AIDS cases in Alberta are reported as homosexual or bisexual males, research determining the incidence of homosexuality and bisexuality would create a dimension to the potential magnitude of the AIDS problem. An awareness of the incidence of bisexuality would contribute to the overall understanding of factors contributing to heterosexual transmission.

Further study concerning the factors that contribute to high risk practices is required. These factors may include alcohol and drug use, condom acceptance, self esteem and selection of partners. While sexual behaviour is multifaceted, the search for variables that contribute to unsafe sex practices is crucial to programs aimed at preventing the spread of the HIV.

Research pertaining to the effect of various educational strategies that contribute to safer sex practices is required. The intervention strategies to be evaluated may include individual counselling, group teaching, audio visual aids or printed material. In addition, the content of safer sex counselling should be tailored to the needs of the target group. Further study is required to determine the safer sex informational needs of gay and bisexual men.

Further investigation is required to determine what formulates the decision to request or refuse an HIV antibody test. Possible benefits or harm created by an HIV antibody test should be evaluated. The consequences of not having an HIV antibody test should be determined. Because approximately half of the subjects in this sample received pre and posttest counselling, further study is needed to identify factors that contribute to this low rate of counselling.

Finally, the comfort of health care professionals in discussing the sex practices of gay men should be determined. The inclusion of alternate lifestyles in nursing and medical education programs requires evaluation. Only when gay sex practices are discussed openly with individuals requiring safer sex information can the prevention of HIV infection be expediated. The comment of an HIV sero-positive subject summarizes this concern.

> *In my opinion the psychology of being gay in a homophobic society tends to cripple the ability to effectively deal with AIDS.*

For the benefit of all persons who continue high risk behaviour we must continue the search for effective strategies to reduce HIV transmission. The complexities of understanding human sexual behaviour must be addressed with an open mind in a milieu free of stigma. The threat of AIDS remains one of the greatest challenges facing humanity.

> *Being an idealist, I'd like to know why so many people still believe they cannot be affected by the [HIV] virus. Too many feel "invincible", or perhaps "can't happen to me"! In the course of my job, I meet many men who don't play it safe and I wonder why? Obviously rhetorical questions, I know, I know* (HIV sero-negative subject).

REFERENCES

Adrien, A., & Carsley, J. (1987). A campaign to promote safe sexual practices in the Montreal homosexual population - Quebec. *Canada Diseases Weekly Report, 13*(3), 9-12.

AIDS Committee of Toronto. (1988). News for gay men: Oral sex. (A pamphlet available from Box 55, Station F, Toronto, Ontario, M4Y 2L4).

Alberta Community & Occupational Health. (1988a). Alberta's plan for AIDS patient care services.

Alberta Community & Occupational Health. (1988b). Information for health care providers on the HIV antibody test.

Alberta Community & Occupational Health, Communicable Disease Control & Epidemiology. (1989). Alberta AIDS summary. *Epidemiologic Notes and Reports, 13*(1), 3-12.

Alberta Community & Occupational Health, Communicable Disease Control & Epidemiology. (1990). Alberta Aids summary to April 30, 1990.

Alberta Health. (1988). AIDS: The choices and chances (A pamphlet available from Sexually Transmitted Disease Clinics and health units in Alberta).

Alberta Public Health Act. (1985). *Communicable disease regulations*. Edmonton: Queens Printer.

Ashman, A. F. (1976). *Commentary on a local non-ethnic minority group*. Unpublished master's thesis, University of Alberta, Edmonton.

Babbie, E. (1986). *The practice of social research*. Belmont, CA: Wadsworth.

Bakerman, S. (1988). *Understanding AIDS*. Greenville, NC: Interpretive Laboratory Data.

Barry, M. J., Cleary, P. D., & Fineberg, H. (1986). Screening for HIV infection: Risks, benefits and the burden of proof. *Law, Medicine and Health Care, 14*(5-6), 259-267.

Batchelor, W. F. (1984). AIDS: A public health and psychological emergency. *American Psychologist, 39*, 1279-1284.

Becker, M. H., & Joseph, J. G. (1988). AIDS and a behavioral change to reduce risk: A review. *American Journal of Public Health, 78*(4), 394-410.

Bell, A.P., & Weinberg, M. S. (1978). *Homosexuality*. New York: Simon & Schuster.

Booth, W. (1988). The long lost survey on sex. *Science, 239*, 1084-1085.

Boyko, W., Schechter, M., Craib, K., Constance, P., Nitz, R., Fay, S., McLeod, A., & O'Shaughnessey, M. (1986). The Vancouver lymphadenopathy - AIDS study: 5. Antecedent behavioral, clinical & laboratory findings in patients with AIDS and HIV-seropositive controls. *Canadian Medical Association Journal, 135*(8), 881-887.

Brink, P. J., & Wood, M. J. (1988). *Basic steps in planning research.* Boston: Jones & Bartlett.

Brink, P. J., & Wood, M. J. (1989). Comparative designs. In P. Brink and M. Woods (Eds.), *Advanced design in nursing research.* Beverly Hills, CA: Sage.

Burke, D. S., Brundage, J. F., Redfield, R. R., Damato, J. J., Schable, C. A., Putman, P., Visintine, R., & Kim, H.I. (1988). Measurement of the false positive rate in a screening program for human immunodeficiency virus infections. *New England Journal of Medicine, 319*(15), 961-964.

Bye, L. (1987). Designing an effective AIDS prevention campaign strategy for San Francisco: Results from the first probability sample of an urban gay male community. In D. G. Ostrow (Ed.), *Biobehavioral control of AIDS.* New York: Irvington.

Canadian AIDS Society. (1988). *Safer sex guidelines.* A resource document for educators and counsellors. Ottawa.

Carmines, E. G. & Zeller, R. A. (1979). *Reliability and Validity Assessment.* Beverly Hills: Sage.

Centres for Disease Control. (1985). Self-reported behavioral change among gay and bisexual men - San Francisco. *Morbidity and Mortality Weekly Report, 34*(40), 613-615.

Centres for Disease Control. (1987). Public health service guidelines for counselling and HIV antibody testing to prevent HIV infection and AIDS. *Morbidity and Mortality Weekly Report, 36*(31), 509-515.

Centres for Disease Control. (1988a). Condoms for prevention of sexually transmitted diseases. *Morbidity and Mortality Weekly Report, 37*(9), 133-137.

Centres for Disease Control. (1988b). Number of sex partners and potential risk of sexual exposure to human immunodeficiency virus. *Morbidity and Mortality Weekly Report, 37*(37), 566-568.

Centres for Disease Control. (1988c). Partner notification for preventing human immunodeficiency virus (HIV) infection - Colorado, Idaho, South Carolina, Virginia. *Morbidity and Mortality Weekly Report, 37*(25), 393-402.

Centres for Disease Control: Leads from the Morbidity and Mortality Weekly Report. (1989). Distribution of AIDS cases, by racial/ethnic group and exposure category United States, June 01, 1981-July 04, 1988. *The Journal of the American Medical Association, 26* 1(2), 201-205.

Coates, R., Calzavara, L., Read, S., Fanning, M., Shepherd, F., Klein, M., Johnson, J. K., & Soskolne, C. (1988). Risk factors for HIV infection in male sexual contacts of men with AIDS or AIDS-related conditions. *American Journal of Epidemiology, 128*(4), 729-739.

Coates, R., Calzavara, L., Soskolne, C., Read, S., Fanning, M., Shepherd, F., Klein, M., & Johnson, J. K. (1988). Validity of sexual histories in a prospective study of male sexual contacts of men with AIDS or AIDS-related condition. *American Journal of Epidemiology, 128*(4), 719-728.

Coates, R., Soskolne, C., Calzavara, L., Read, S., Fanning, M., Shepherd, F., Klein, M., & Johnson, J. K. (1986). The reliability of sexual histories in AIDS-related research: Evaluation of an interview administered questionnaire. *Canadian Journal of Public Health, 77*, 343-348.

Coates, R., Soskolne, C., Read, S., Fanning, M., Klein, M., Shepherd, F., Calzavara, L., Johnson, J. K., & O'Shaughnessey, M.V. (1986). A prospective study of male sexual contacts of men with AIDS-related conditions (ARC) or AIDS: HTLV-III antibody, clinical, and immune function status at induction. *Canadian Journal of Public Health, 77*, (Suppl. 1), 26-32.

Craib, K. (1989). Questionnaire for St. Paul's Hospital, University of British Columbia, Vancouver lymphadenophathy-AIDS study.

Dillman, D. A. (1983). Mail and other self-administered questionnaires. In P. H. Rossi, J. D. Wright, A. B. Anderson (Eds.), *Handbook of survey research* (pp.359-376). San Diego, CA: Academic Press.

Edmonton area study, 1988. Population Research Laboratory, Department of Sociology, University of Alberta. Edmonton.

Emmons, C., Joseph, J., Kessler, R., Wortman, C. J., Montgomery, S., & Ostrow, D. (1986). Psychosocial predictors of reported behavior change in homosexual men at risk for AIDS. *Health Education Quarterly, 13*(4), 331-345.

Federal Centre for AIDS. (new cases to Jan. 09, 1989). AIDS update: AIDS in Canada. Ottawa.

Federal/Provincial/Territorial Working Group on Confidentiality in Relation to HIV Seropositivity (November, 1988). A Report approved by the Interprovincial Meeting of Ministers of Health.

Feldblum, P., & Fortney, J. (1988). Condoms, spermicides, and the transmission of HIV: A review of the literature. *American Journal of Public Health, 78*(1), 52-54.

Fox, R., Odaka, N. J., Brookmeyer, R., & Polk, B. F. (1987). Effect of HIV antibody disclosure on subsequent sexual activity in homosexual men. *AIDS 1987, 1*, 241-246.

Frazer, I., McCamish, M., Hay, I., & North, P. (1988). Influence of human immunodeficiency virus antibody testing on sexual behavior in a "high-risk" population from a "low-risk city." *The Medical Journal of Australia, 149*, 365-368.

Goedert, J. J. (1987). What is safe sex? Suggested standards linked to testing for human immunodeficiency virus. *The New England Journal of Medicine, 316*(21), 1339-1342.

Greater Edmonton Directory. (1989). *The talking purple pages*. Edmonton: Purple Pages Publications, Inc.

Green, J. (1989). Post-test couselling. In J. Green & A. McCraner (Eds.), *Counselling in HIV infection and AIDS* (pp. 28-68). Boston: Blackwell Scientific Publications.

Harowski, K. (1987). The worried well: Maximizing coping in the face of AIDS. *Journal of Homosexuality, 14*, 299-309.

Health & Welfare Canada (1989). Human immunodeficiency virus antibody testing in Canada. *Canada Diseases Weekly Report, 15*(8), 37-47.

Hencken, J.D. (1984). Conceptualizations of homosexual behaviour which preclude homosexual self-labelling. *Journal of Homosexuality, 9*, 53-63.

Herek, O. N. (1984). Beyond "homophobia": A social psychological perspective on attitudes towards lesbian and gay men. *Journal of Homosexuality, 10*, 1-21.

Hertick, E. S. & Martin, D. A. (1987). Developmental issues and their gay resolution. *Journal of Homosexuality, 14*, 25-43.

Hessol, N. A., Lifson, A. R., O'Malley, P. M., Doll, L. S., Jaffe, H. W., & Rutherford, G. W. (1989). Prevalence, incidence and progression of human immunodeficiency virus infection in homosexual & bisexual men in Hepatitis B vaccine trials, 1978-1988. *American Journal of Epidemiology, 130*(6), 1167-1175.

Jones, C., Waskin, H., Gerety, B., Skripper, B., Hull, H. F., & Mertz, G. J. (1987). Persistence of high-risk sexual activity among homosexual men in an area of low incidence of acquired immune deficiency syndrome. *Sexually Transmitted Diseases, 14*(2), 79-82.

Joseph, J. (1986). *Coping and Change: A survey of Chicago Men.* Howard Brown Memorial Clinic/University of Michigan.

Kelly, J. A., Lawrence, J. S., Brasfield, T. L., & Hood, H. (1987, June). Relationships between knowledge about AIDS risk & actual behavior in a sample of homosexual men: Implications for prevention. Paper presented at the International Conference of AIDS, Washington, D.C.

Kelly, J. A., Lawrence, J. S., Brasfield, T. L., Stevenson, M. S., Diaz, Y. E., & Hauth, A. C. (1990). AIDS risk behavior patterns among gay men in small southern cities. *American Journal of Public Health, 80*(4), 416-418.

Kingsley, L., Kaslow, R., Rinaldo, C., Detre, K., Odaka, N., Van Raden, M., Detels, R., Polk, B. F., Chmiel, J., Kelsey, S., Ostrow, D., & Visscher, B. (1987). Risk factors for seroconversion to human immunodeficiency virus among male homosexuals. *The Lancet*, 1, 345-349.

Kinsey, A., Pomeroy, W., & Martin, C. (1948). *Sexual behavior in the human male.* Philadelphia: Saunders.

Kituse, J. I. (1980). Coming out all over: Deviants and the politics of social problems. *Social Problems, 28*, 1-13.

Kreiss, J., Ruminjo, I., Ngugi, E., Roberts, P., Ndinya-Achola, J., & Plumber, F. (1989, June). *Efficacy of nonoxynal-9 in preventing HIV transmission.* Paper presented at the V International Conference on AIDS, Montreal, Canada.

Kus, R. J. (1985). Stages of coming out: An ethnographic approach. *Western Journal of Nursing Research, 7,* 177-198.

Lovejoy, N., & Moran, T. (1988). Selected health beliefs, behaviors and informational needs of homosexual/bisexual men with AIDS or ARC. *International Journal of Nursing Studies, 25*(3), 207-216.

Lovejoy, N., Moran, T., & Paul, S. (1988). Self-care behaviors and informational needs of seropositive homosexual/bisexual men. *Journal of Acquired Immune Deficiency Syndrome, 1*(2), 155-161.

Lyter, D., Valdiserri, R., Kingsley, L., Amoroso, W., & Rinaldo, C. (1987). The HIV antibody test: Why gay and bisexual men want or do not want to know results. *Public Health Reports 102*(5), 468-474.

Marchand, M. (1989). *Fight AIDS with education* (Report of the gay community needs assessment). AIDS Vancouver.

Martin, D.A. (1982). Learning to hide: The socialization of the gay adolescent. *Adolescent Psychiatry 10,* 52-65.

Maw, R.D., Connolly, J., Johnston, S., McKirgan, J., McNeill, J., & Russell, J. (1987). Follow up study of sexually transmitted disease (STD), sexual practice, and human immunodeficiency virus (HIV) serology in homosexual men attending an STD clinic [Letter to the editor]. *Genitourinary Medicine, 63*(4), 279-280.

Mayer, K., Ayotte, D., Groopman, J., Stoddard, A., Sarngadharan, M., & Gallo, R. (1986). Association of human T-lymphotropic virus type III antibodies in a cohort of homosexual men from Boston with and without generalized lymphadenopathy. *The American Journal of Medicine, 80*(3), 357-363.

Mayer, K., Stoddard, A., McCusker, J., Ayotte, D., Ferriani, R., & Groopman, J. (1986). Human T-lymphotropic virus type III in high risk, antibody negative homosexual men. *Annals of Internal Medicine, 104*(2), 194-196.

McCusker, J., Stoddard, A., Mayer, K., Zapka, J., Morrison, C., & Saltzman, S. (1988). Effects of HIV antibody test knowledge on subsequent behavior in a cohort of homosexually active men. *American Journal of Public Health, 78*(4), 462-467.

McKusick, L. (1988). AIDS Behavioral Research Project. University of California, San Francisco.

McKusick, L., Horstman, W., & Coates, T. (1985). AIDS and 36 sexual behaviors reported in gay men in San Francisco. *American Journal of Public Health, 75*(5), 493-496.

McKusick, L., Wiley, J., Coates, T., Stall, R., Saika, G., Morin, S., Charles, K., Horstman, W., & Conant, M. (1985). Reported changes in the sexual behavior of men at risk for AIDS, San Francisco, 1982-84 - the AIDS Behavioral Research Project. *Public Health Reports, 100*(6), 622-629.

Medical Letter, Inc. (1988). Diagnostic tests for AIDS. *The Medical Letter, 30*, (Issue 771), 73-75.

Moss, A., Osmond, D., Bacchetti, P., Chermann, J., Barre-Sinoussi, F., & Carlson, J. (1987). Risk factors for AIDS and HIV seropositivity in homosexual men. *American Journal of Epidemiology, 125*(6), 1035-1047.

Nachmias, D. & Nachmias, C. (1987). *Research Methods in the Social Sciences*. New York: St. Martin's Press.

National Advisory Committee on AIDS. (1987). Human immunodeficiency virus (HIV) infection contact tracing recommendations. *Canada Diseases Weekly Report, 13*(4), 13-14.

National Health & Welfare. (1986). Report on AIDS in Canada (the fifth report on AIDS to the House of Commons). Ottawa.

Norusis, M (1988). *The SPSS guide to data analysis for SPSS*. Chicago: SPSS.

Ornstein, N. (1989). *AIDS in Canada: Knowledge, behavior and attitudes of adults*. Toronto: University of Toronto Press.

Padian, N., Marquis, L., Francis, D., Anderson, R. E., Rutherford, G. W., O'Malley, P. M., & Winkelstein, W. (1987). Male-to-female transmission of human immunodeficiency virus. *The Journal of the American Medical Association, 258*(6), 788-790.

Palacios-Jimenez, L., & Shernoff, M. (1986). *Eroticizing Safer Sex*. New York: Gay Men's Health Crisis.

Perry, S., & Markowitz, J. (1988). Counselling for HIV testing. *Hospital and Community Psychiatry, 39* (7), 731-739.

Piazza, M., Chirianni, A., Picciotto, L., Guadagnino, V., Orlando, R., Cataldo, P., Infettive, C., & Policlinico, S. (1989). Passionate kissing and microlesions of the oral mucosa: Possible role in AIDS transmission [Letter to the editor]. *The Journal of the American Medical Association, 261* (2), 244-245.

Pineo, P. C. (1984). Revisions of the Pineo-Porter-McRoberts socioeconomic classification of occupations for the 1981 census. A paper prepared for the Social Sciences and Humanities Research Council, Canada.

Polk, B. F., Fox, R., Brookmeyer, R., Kanchanaraska, S., Kaslow, R., Visscher, B., Rinaldo, C., & Phair, J. (1987). Predictors of the acquired immune deficiency syndrome developing in a cohort of seropositive homosexual men. *The New England Journal of Medicine, 316*(2), 61-66.

Reckart, M. L., Barnett, J. A., Manzon, L. M., Wittenberg, L., & McNabb, A. (1990, June). *Nonoxynol-9: Its adverse effects.* Paper presented at the VI International Conference on AIDS, San Francisco, California.

Robert, B., & Rosser, S. (1990). Evaluation of the efficacy of AIDS education interventions for homosexually active men. *Health Education Research, 5*, 299-308.

Royal Society of Canada (1988). AIDS: A perspective for Canadians. Ottawa.

Ruse, M. (1988). *Homosexuality*. New York: Basil Blackwell.

Saltzman, S., Stoddard, A., McCusker, J., Moon, M., & Mayer, K. (1987). Reliability of self-reported sexual behavior risk factors for HIV infection in homosexual men. *Public Health Reports, 102* (6), 692-697.

Schechter, M., Boyko, W., Jeffries, E., Willoughby, B., Nitz, R., & Constance, P. (1985). The Vancouver lymphadenopathy - AIDS study: Persistent generalized lymphadenopathy. *Canadian Medical Association Journal, 132*(11), 1273.

Schechter, M., Craib, K. J., Willoughby, B., Douglas, B., McLeod, A., Maynard, M., Constance, P., & O'Shaughnessey, M. (1988). Patterns of sexual behavior and condom use in a cohort of homosexual men. *American Journal of Public Health, 78*(12), 1535-1538.

Siegel, K., Mesagno, F. P., Chen, J., & Christ, G. (1989). Factors distinguishing homosexual males practising risky and safer sex. *Social Science and Medicine, 28*(6), 561-569.

Soskolne, C., Coates, R., & Sears, A. (1986). Characteristics of a male homosexual/bisexual study population in Toronto, Canada. *Canadian Journal of Public Health, 77*(1), 12-16.

Stall, R., McKusick, L., Wiley, J., Coates, T., & Ostrow, D. (1986). Alcohol and drug use during sexual activity and compliance with safe sex guidelines for AIDS: The AIDS behavioral research project. *Health Education Quarterly, 13*(4), 359-371.

Statistics Canada. (1981). *Standard occupational classification, 1980*. Ottawa: Minister of Supply & Services Canada.

Stoddard, A. (1988). Fenway health centre behavioral epedemiology study (Boston). University of Massachusetts, Amherst, MA.

Valdiserri, R. (1988). Questionnaire: Variables influencing condom use in a cohort of gay and bisexual men. Falk Clinic, Pittsburg.

Valdiserri, R., Lyter, D., Kingsley, L., Leviton, L., Schofield, J., Huggins, J., Ho, M., & Rinaldo, C. (1987). The effect of group education on improving attitudes of risk reduction. *New York State Journal of Medicine, 87*(5), 272-278.

Valdiserri, R., Lyter, D., Leviton, L., Callahan, C., Kingsley, L., & Rinaldo, C. (1988). Variables influencing condom use in a cohort of gay and bisexual men. *American Journal of Public Health, 78*(7), 801-805.

Van Griensven, G., DeVroome, E., Tielman, R., Goudsmit, J., Van Der Noordaa, J., De Wolf, F., & Coutinho, R. (1988). Impact of HIV antibody testing on changes in sexual behavior among homosexual men in the Netherlands. *American Journal of Public Health, 78*(12), 1575-1577.

Warren, C. (1980). Homosexuality & stigma. In J. Marmor (Ed.), *Homosexual behavior: A modern reappraisal* (pp.123-141). New York: Basic Books.

Weiss, R., & Their, S. O. (1988). HIV testing is the answer - what's the question? *The New England Journal of Medicine, 319*(15), 1010-1012.

Weller, I. V. D., Carne, C. A., Sattentau, Q., Smith, A., Tedder, R. S., Clapham, P., Dalgleish, A., Weber, J., & Adler, M. (1987). Human immunodeficiency virus in the regular sexual partners of homosexual men with AIDS and persistent generalized lymphadenopathy. *Journal of Medical Virology, 22*, 91-98.

Wigersma, L. & Oud, R.(1987). Safety and acceptability of condoms for use by homosexual men as a prophylactic against transmission of HIV during anogenital sexual intercourse. *British Medical Journal, 295*, 93.

APPENDIX A

GLOSSARY OF TERMS

GLOSSARY OF TERMS

AIDS: Acquired immunodeficiency syndrome. Includes HIV positive individuals who have experienced an opportunistic infection or other identifiable conditions to be classified as AIDS. The disease severely cripples the immune system and is ultimately fatal.

Anilingus: A sexual activity that involves contact between the tongue and anus (also labelled rimming).

Bisexual: One who is motivated in adult life by an erotic attraction to members of either the same or opposite sex and usually engages in overt sexual relations with both males and females.

Celibacy: A physically mature person who makes a conscious choice not to engage in overt sexual behavior.

Fellatio: Oral intercourse.

Fisting: Inserting one's fist into the rectum of another for sexual pleasure.

Gay: A homosexual or bisexual male.

HIV: Human immunodeficiency virus. It is a retrovirus and the causative agent of AIDS.

HIV antibody test: A blood test to detect antibody indicating past infection with HIV. A positive (reactive) test is screened more than once using the enzyme linked immunosorbant assay (ELISA) and verified using the Western Blot or immunofluorescence assay (IFA).

Homosexual: One who is motivated in adult life by a definite preferential erotic attraction for members of the same sex and who usually engages in overt sexual relations with them. In this paper homosexual is synonymous with male homosexual.

Insertive anal intercourse: The individual inserts his penis into his partner's rectum.

Receptive anal intercourse: The individual's rectum is penetrated by his partner's penis.

Sero-negative: Producing a negative reaction to specific HIV serological tests. A negative test is reported as non-reactive.

Sero-positive: Producing a positive reaction to specific HIV serological tests. A positive test is reported as reactive.

Sexual abstinence: A physically mature person who wants to have sexual interaction but is unable to for a variety of reasons.

Transsexual: A person who feels that his or her gender is opposite of his or her anatomic gender.

APPENDIX B

SAFER SEX GUIDELINES

SAFER SEX GUIDELINES

No risk of getting AIDS

- no sexual intercourse
- touching, hugging, massage
- social kissing
- sex with one partner, if you are both free of the virus and faithful to each other
- rubbing bodies together
- kissing or licking the body (clean skin, no oral contact with sex organs or open sores)
- using unshared sex toys

Some risk of getting AIDS

- vaginal sex with a latex condom (proper use, no breakage) plus spermicide (nonoxynol-9 kills the virus)
- anal sex with a latex condom (proper use, no breakage)
- deep (french) kissing (unless the kiss draws blood, or if either of you have cuts or open sores in or around your mouth)
- oral sex (mouth to sex organs)
- mouth to anus sex

Highest risk of getting AIDS

- anal or vaginal sex without a condom
- sharing objects inserted into the anus or vagina (sex toys)
- sex during menstruation, without a condom
- sex if either partner has cuts, sores or scratches where the virus could enter
- any activity that allows blood-to-blood or semen-to-blood contact

From: Alberta Health. (1988).

AIDS: The choices and chances (pamphlet).

APPENDIX C

THE LEVELS OF RISK IN SEXUAL ACTIVITIES

THE LEVELS OF RISK IN SEXUAL ACTIVITIES

No Possibility of Transmission of HIV

Solo masturbation

Mutual masturbation

Dry kissing

Body-to-body rubbing (frottage)

Telephone sex

Voyeurism

Erotic films, videos, books, magazines

Fantasy

Exhibitionism

Erotic talk

Body licking and kissing (except mucosal linings)

Massage/touch/caresses

Erotic bathing or showering

Unshared sex toys

Nipple stimulation (without drawing blood)

Nibbling/biting (without blood)

External urination

External defecation

Receptive cunnilingus with barrier

Receptive anilingus with barrier

Insertive anilingus with barrier

Minimal Possibility of HIV Transmission

Wet kissing

Internal urination (ingesting urine)

Anilingus without a barrier

Ingestion of feces

Insertive fellatio without a condom

Insertive fellatio with a condom

Receptive fellatio without a condom

Receptive fellatio without a condom, no ejaculation

Receptive fellatio without a condom, ejaculation without swallowing

Insertive cunnilingus without a barrier outside menstruation

Insertive cunnilingus with a barrier

Receptive cunnilingus with a barrier

Receptive cunnilingus without a barrier

Low Possibility of HIV Transmission

Insertive cunnilingus without a barrier during menstruation

Receptive fellatio without a condom and with swallowing of ejaculate

Insertive penile-vaginal intercourse with a condom

Receptive penile-rectal intercourse with a condom

Sadomasochistic activity where blood is drawn and proper blood precautions are followed

Very High Possibility of HIV Transmission

Receptive penile-rectal intercourse without a condom

Receptive penile-vaginal intercourse without a condom

Insertive penile-rectal intercourse without a condom

Insertive penile-vaginal intercourse without a condom

Coitus interruptus (intercourse with withdrawal before ejaculation) without a condom

Shared sex toys (mutually receptive)

From: Safer sex guidelines. A resource document

for educators and cousellors, (CAS, 1988).

APPENDIX D

QUESTIONNAIRE

A Survey of Edmonton Gay Men to Determine the Relationship Between Information about HIV Antibody Status and Sexual Practices

Agnes Honish
Graduate Student
Faculty of Nursing
University of Alberta

Dr. P. Brink
Associate Dean, Research
Faculty of Nursing
University of Alberta

INSTRUCTIONS

This self-administered questionnaire covers several aspects of your sexual practices, beliefs, and general life style. It should take about 30 minutes to complete. If you have previously filled out this questionnaire DO NOT complete it again.

Try to complete the questionnaire in one sitting if possible. Some questions ask you about potentially sensitive areas of your life, so you may wish to be alone while you are completing the questionnaire.

It is important to know your behaviors and what you believe, so I ask for your complete honesty in answering each question. I would appreciate it if you would answer every question. Please feel free to comment on any questions.

If you have any questions or concerns, I may be contacted at 457-1524. If I am not available a telephone answering machine will be on, please leave a number for me to return your call.

Please return the completed questionnaire in the self-addressed envelope. **DO NOT MARK YOUR NAME ON ANY PART OF THIS QUESTIONNAIRE.**

Thank you in advance for taking the time to complete this questionnaire.

Agnes Honish
Graduate Student

The first set of questions relate to AIDS.

1. When did you first hear about AIDS? Please try to remember as accurately as possible.

_____ year _____ month

2. Have you been told by your doctor that you have AIDS?

___ Yes. When were you told? _____ year _____ month

___ No

3. Do you or have you had any friends or lovers with AIDS?

_____ yes; friend(s)

_____ yes; lover(s)

_____ no

4. Have any of your friends or lovers died of AIDS?

_____ yes, friend(s)

_____ yes, lover(s)

_____ no

The following questions deal with sex in your relationship(s). By "sex" I am referring to any activity where you and/or your partner become involved to the point of orgasm.

5. Which one of the following categories best describes your sexual preference? (check only one)

___ sex with men only

___ sex mainly with men

___ sex with women as much as men

___ sex mainly with women

___ sex with women only.

6. About how many different male sexual partners have you had over your entire lifetime? ______________
number

7. How long ago was it that you last had sex? Please record the date.

________________ __________
year month

8. Have you had sex in the last six months?

_____ yes (Go to question 11)

_____ no

9. Why have you not had sex in the last six months?

___ I haven't felt like having sex

___ I have had problems maintaining an erection ("couldn't get it up")

___ I have been afraid to have sex because I am worried about catching AIDS

___ I have not found partners to have sex with

___ other. Please explain ______________________________

____

10. Being celibate or abstaining (not having sex) affects men in different ways. Please circle the number that indicates how much you agree or disagree with the following statements?

	Strongly Disagree				Strongly Agree
a. Not having sex makes me unhappy.	1	2	3	4	5
b. Not having sex is embarrassing to talk about.	1	2	3	4	5
c. Not having sex does not bother me at all.	1	2	3	4	5

11. About how many different male sexual partners (if any) have you had sex with during the last six months? ________
number

12. Do you have a regular sex partner?

___ yes If yes, for how long? ______________________

___ no (go to question 14).

13. Do you have sex with anyone other than your regular sex partner?

___ yes

___ no

14. How many of your sexual encounters in the last six months have been group sex?

___ all of them

___ more than half

___ less than half

___ none of them

___ not applicable--I haven't had sex in the last 6 months

15. How many of your male sexual partners in the last six months would you regard as "one night stands" or similar very short term relationships? Please check the answer that applies to you.

_____ all of them

_____ more than half

_____ half of them

_____ less than half

_____ none of them

_____ not applicable - I haven't had sex in the last six months.

16. Have you had the HIV antibody test?

___ yes.

___ no. **If no, skip to question 26.**

17. How many times have you been tested? ________ number

18. What is your current HIV antibody status (test result)?

a. __________ negative When did you first get a negative result? ________ year ________ month

b. __________ positive When did you first get a positive result? ________ year ________ month

c. __________ not aware of result

19. Did you have counselling before your first HIV antibody test?

___ yes doctor

___ yes nurse

___ yes other (specify) ________________

___ no

20. Did you have counselling by a doctor or nurse when you were given the first HIV antibody test result?

___ yes doctor

___ yes nurse

___ no

21. How were you notified about your first HIV antibody test result?

_____ by telephone

_____ in person by a doctor

_____ in person by a nurse

_____ other (specify) ____________________

22. Did you want more information than was given after your first HIV test?

___ yes ___ no

If yes, please use this space to explain the information you required or concerns you had.

____

____

____

____

____

23. Do you feel you have been discriminated against because of your HIV antibody status?

___ yes ___ no

If yes, how? ______________________________

____

____

____

____

24. What did you do when you learned about your HIV antibody status?

____

____

____

____

(Please answer only if YOU HAVE HAD an HIV test)

25. Since the date of your **first HIV test** your behavior may have changed. For each behavior please indicate whether this has increased or decreased by **circling** the appropriate number; that is from then to now there has been a:

1	2	3	4	5	NA
marked increase	moderate increase	little to no change	moderate decrease	marked decrease	not applicable

If you have never practiced this behavior **circle NA (not applicable)****.**

A.	You engaged in mutual masturbation until your partner ejaculated ("came") without a condom.	1	2	3	4	5	NA
B.	You ejaculated ("came") in his mouth without a condom.	1	2	3	4	5	NA
C.	You ejaculated ("came") in his anus without a condom.	1	2	3	4	5	NA
D.	You put your whole hand or fist into his anus without a glove.	1	2	3	4	5	NA
E.	He ejaculated ("came") in your mouth without a condom.	1	2	3	4	5	NA
F.	He ejaculated ("came") in your anus without a condom.	1	2	3	4	5	NA
G.	He put his whole hand or fist into your anus without a glove.	1	2	3	4	5	NA
H.	You wore a condom when you inserted your penis in his mouth.	1	2	3	4	5	NA
I.	He wore a condom when he inserted his penis in your mouth.	1	2	3	4	5	NA
J.	You wore a condom when you inserted your penis into his anus.	1	2	3	4	5	NA
K.	He wore a condom when he inserted his penis into your anus.	1	2	3	4	5	NA
L.	You used a douche or had an enema before having sex.	1	2	3	4	5	NA
M.	You shared sex toys with your partner.	1	2	3	4	5	NA

Please go to question 27.

(Please answer only if **YOU HAVE NOT HAD** an HIV test)

26. Since the summer of 1987 your behavior may have changed. For each behavior indicate whether this has increased or decreased by circling the appropriate number; that is from then to now there has been a:

1	2	3	4	5	NA
marked increase	moderate increase	little to no change	moderate decrease	marked decrease	not applicable

If you have never practiced this behavior **circle NA (not applicable).**

A.	You engaged in mutual masturbation until your partner ejaculated ("came") without a condom.	1	2	3	4	5	NA
B.	You ejaculated ("came") in his mouth without a condom.	1	2	3	4	5	NA
C.	You ejaculated ("came") in his anus without a condom.	1	2	3	4	5	NA
D.	You put your whole hand or fist into his anus without a glove.	1	2	3	4	5	NA
E.	He ejaculated ("came") in your mouth without a condom.	1	2	3	4	5	NA
F.	He ejaculated ("came") in your anus without a condom.	1	2	3	4	5	NA
G.	He put his whole hand or fist into your anus without a glove.	1	2	3	4	5	NA
H.	You wore a condom when you inserted your penis in his mouth.	1	2	3	4	5	NA
I.	He wore a condom when he inserted his penis in your mouth.	1	2	3	4	5	NA
J.	You wore a condom when you inserted your penis into his anus.	1	2	3	4	5	NA
K.	He wore a condom when he inserted his penis into your anus.	1	2	3	4	5	NA
L.	You used a douche or had an enema before having sex.	1	2	3	4	5	NA
M.	You shared sex toys with your partner.	1	2	3	4	5	NA

The next questions pertain to your lifestyle regarding alcohol and drug use.

27. Do you have sex while under the influence of non-medical drugs? Please circle the appropriate number.

1	2	3	4	5
never	seldom	sometimes	often	always

28. Do you have sex while under the influence of alcohol? Please circle the appropriate number.

1	2	3	4	5
never	seldom	sometimes	often	always

For the following set of questions please choose one option you believe answers the question and circle it.

29. The virus causing AIDS has been found in which of the following body fluids?

    a. Blood only

    b. Semen only

    c. Blood and semen but not saliva

    d. Blood and saliva but not semen

    e. Blood, semen, and saliva.

30. Which of the following statements best describes what the finding of HIV antibodies in a person's blood means?

    a. The person will definitely develop AIDS.

    b. The person is immune and will not develop AIDS.

    c. The person is a carrier of AIDS.

31. After being exposed to the AIDS virus, how long does it take for the person to develop a positive antibody test?

    a. 1 - 2 hours

    b. 1 - 2 days

    c. 1 week

    d. 2 weeks - 6 months

32. How many cases of AIDS do you think have been diagnosed in Edmonton since 1982?

    a. less than 10

    b. 10 - 20

    c. 20 - 100

    d. 100 - 250

    e. 250 - 500

    f. more than 500

33. Please check off each sexual practice you think is more safe or less safe with regard to spreading the HIV (AIDS virus).

	more safe	less safe
A. You engaged in mutual masturbation until your partner ejaculated ("came") without a condom.	_____	_____
B. You ejaculated ("came") in his mouth without a condom.	_____	_____
C. You ejaculated ("came") in his anus without a condom.	_____	_____
D. You put your whole hand or fist into his anus without a glove.	_____	_____
E. He ejaculated ("came") in your mouth without a condom.	_____	_____
F. He ejaculated ("came") in your anus without a condom.	_____	_____
G. He put his whole hand or fist into your anus without a glove.	_____	_____
H. You wore a condom when you inserted your penis in his mouth.	_____	_____
I. He wore a condom when he inserted his penis in your mouth.	_____	_____
J. You wore a condom when you inserted your penis into his anus.	_____	_____
K. He wore a condom when he inserted his penis into your anus.	_____	_____
L. You used a douche or had an enema before having sex.	_____	_____
M. You shared sex toys with your partner.	_____	_____

You are almost finished, thank you for continuing.

34. Based on our current knowledge of AIDS, circle T for True and F for False.

T F Everyone exposed to the AIDS virus will develop AIDS.

T F Most people exposed to the AIDS virus will develop AIDS, a few will not.

T F Some people exposed to the AIDS virus will develop AIDS, but most will not.

35. In the Edmonton gay community, what do you think a person's chance is of becoming infected with HIV in the next year? Please circle the appropriate percent.

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

definitely will not happen	equally likely to happen as not to happen	definitely will happen

The last series of questions will involve general information about yourself.

36. When were you born? ______________ year ____________ month

37. How long have you lived in Edmonton? _______ years _______ months

If less than 7 years, where did you move from?

_________________ city or town

_____________________ province or state

______________ country

38. What race/ethnic group do you consider yourself?

____ White

____ Black

____ Asian

____ North American Indian

____ Other; Specify

____

39. What is the highest level of education you have completed?

___ elementary school (up to and including 6th grade)

___ junior high school (up to and including 9th grade)

___ high school (up to and including 12th grade)

___ technical/vocation school (after high school)

___ community college (diploma or certificate)

___ university (Bachelors degree)

___ graduate school (Masters degree)

___ graduate school (Doctoral degree)

___ other (specify) ______________________________

40. Are you presently working full-time, part-time, going to school or something else?

___ employed full-time

___ employed part-time

___ unemployed

___ retired

___ in school

___ disability

41. What kind of work do you normally do? That is, what is your job title?

Occupation ____

a. What does that job involve? (please describe)

____

____

____

b. What kind of place do you work for?

Industry ____

42. In 1988, about how much money did you earn from all sources before taxes?

___ less than $10,000
___ $10,000 to $19,999
___ $20,000 to $29,999
___ $30,000 to $39,999
___ $40,000 to $49,999
___ $50,000 to $59,999
___ $60,000 to $69,999
___ $70,000 to $79,999
___ $80,000 to $89,999
___ $90,000 to $99,999
___ $100,000 or more.

43. How would you rate your current state of health?

1 2 3 4 5

poor excellent

44. Is there anything you would like to tell me about yourself, or the AIDS problem, that would be relevant to this research project?

____
____
____
____
____
____
____
____
____

Thank you again for answering these questions.

Do not mark your name on this questionnaire.

PLEASE MAIL IT BACK TO ME IN THE ENVELOPE PROVIDED.

APPENDIX E

POSTER

Sample Poster

FOR GAY MEN ONLY

A master of nursing student at the University of Alberta is carrying out a study of gay and bisexual men in Edmonton. The purpose of this project is to find out if there is a relationship between information about HIV antibody status and sexual practices. The information that will be collected in this study may help health professionals better understand how AIDS can be prevented. If interested, please complete an attached questionnaire and return it in the stamped envelope provided. The questionnaire is anonymous, so your name is not requested.

Thank you for your participation.

Agnes Honish

Graduate Student

University of Alberta

Faculty of Nursing

APPENDIX F

NEWSPAPER ADVERTISEMENT IN GAY PUBLICATIONS

Sample Newspaper Advertisement

Are you a gay or bisexual male? A master of nursing student at the University of Alberta is carrying out a study of gay and bisexual men in Edmonton. The purpose of this project is to find out if there is a relationship between information about HIV antibody status and sexual practices. The results of this project will assist health professionals to promote health and better understand how AIDS can be prevented. If interested in completing an anonymous questionnaire, please leave a fictitious name and an address on a recording at ____________*. A stamped, self-addressed questionnaire will be mailed to you. Alternately a questionnaire may be obtained at the AIDS Network of Edmonton Society, 10704 -108 Street, phone 424-4767.

*This phone number will be obtained for the purpose of this study only.

APPENDIX G

OCCUPATIONS OF RESPONDENTS

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V41       occup

                                                            VALID     CUM
  VALUE LABEL               VALUE  FREQUENCY  PERCENT     PERCENT   PERCENT

govt admin                   1113          3      1.5        1.5       1.5
govt inspectors              1116          2      1.0        1.0       2.6
general manager & ot         1130          1       .5         .5       3.1
mgr engineering              1131          1       .5         .5       3.6
educ administ                1133          2      1.0        1.0       4.6
administrators - med         1134          1       .5         .5       5.2
bank administ                1135          2      1.0        1.0       6.2
sales/adv mgr                1137          5      2.4        2.6       8.8
service mgr                  1142          3      1.5        1.5      10.3
management: construc         1145          1       .5         .5      10.8
management: transpor         1147          1       .5         .5      11.3
business management(         1149          1       .5         .5      11.9
business/personal se         1157          4      2.0        2.1      13.9
accountants                  1171          4      2.0        2.1      16.0
management consultan         1173          1       .5         .5      16.5
personnel & related          1174          3      1.5        1.5      18.0
public relations             1179          3      1.5        1.5      19.6
chemist                      2111          1       .5         .5      20.1
architect                    2141          1       .5         .5      20.6
electrical engineer          2144          1       .5         .5      21.1
community planner            2157          2      1.0        1.0      22.2
draftsman                    2163          1       .5         .5      22.7
eng technologist             2165          1       .5         .5      23.2
systems analyst              2183          5      2.4        2.6      25.8
psychologist                 2315          2      1.0        1.0      26.8
social worker                2331          7      3.4        3.6      30.4
camp counsellor/comm         2333          2      1.0        1.0      31.4
health, social servi         2339          1       .5         .5      32.0
lawyer                       2343          1       .5         .5      32.5
librarian                    2351          2      1.0        1.0      33.5
education counsellor         2391          2      1.0        1.0      34.5
professor                    2711          4      2.0        2.1      36.6
univer teaching asst         2719          2      1.0        1.0      37.6
high school teacher          2733          3      1.5        1.5      39.2
voc teacher                  2791          4      2.0        2.1      41.2
teacher aide                 2799          1       .5         .5      41.8
doctor                       3111          2      1.0        1.0      42.8
nurse                        3131          1       .5         .5      43.3
nurse's aide                 3135          3      1.5        1.5      44.8
audio & speech thera         3136          1       .5         .5      45.4
child care worker/pa         3139          2      1.0        1.0      46.4
painters artists             3311          1       .5         .5      46.9
product & interior d         3313          1       .5         .5      47.4
advertising and illu         3314          1       .5         .5      47.9
photographers and ca         3315          1       .5         .5      48.5
producers/directors(         3330          1       .5         .5      49.0
dancers, choreograph         3334          1       .5         .5      49.5
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V41        occup

radio & tv announcer       3337        1      .5      .5    50.0
occup performing and       3339        1      .5      .5    50.5
writers/editors            3351        4     2.0     2.1    52.6
supervisor: sport &        3360        1      .5      .5    53.1
coaches/instructors(       3370        1      .5      .5    53.6
supervisor: bookkeep       4130        3     1.5     1.5    55.2
book-keeper                4131        3     1.5     1.5    56.7
cashier/teller             4133        1      .5      .5    57.2
bank clerk                 4135        1      .5      .5    57.7
data processor/compu       4143        3     1.5     1.5    59.3
library clerk/filing       4161        2     1.0     1.0    60.3
receptionist               4171        1      .5      .5    60.8
supervisor: clerical       4190        1      .5      .5    61.3
collector                  4191        1      .5      .5    61.9
claim adjustor             4192        1      .5      .5    62.4
office clerk               4197        2     1.0     1.0    63.4
shopkeeper,sales mgr       5130        9     4.4     4.6    68.0
commercial sales rep       5133        1      .5      .5    68.6
salesman/partsman          5135        7     3.4     3.6    72.2
sales/commodities          5149        1      .5      .5    72.7
real estate sales          5172        3     1.5     1.5    74.2
sales agents, trader       5173        1      .5      .5    74.7
police                     6112        1      .5      .5    75.3
supervisor: food & b       6120        1      .5      .5    75.8
cook                       6121        5     2.4     2.6    78.4
bartender                  6123        2     1.0     1.0    79.4
waitress/busboy/host       6125        5     2.4     2.6    82.0
food/beverage prepar       6129        1      .5      .5    82.5
residence mgr/apt mg       6130        1      .5      .5    83.0
barber/beautician          6143        3     1.5     1.5    84.5
airline hostess/stew       6145        1      .5      .5    85.1
janitors                   6191        1      .5      .5    85.6
dishwasher/kitchen h       6198        2     1.0     1.0    86.6
car jockey/lot atten       6199        1      .5      .5    87.1
farmer(rancher,lives       7113        1      .5      .5    87.6
welder                     8335        1      .5      .5    88.1
boilermaker                8337        1      .5      .5    88.7
cabinet maker              8541        1      .5      .5    89.2
cutting/textiles           8551        1      .5      .5    89.7
upholsterer                8562        1      .5      .5    90.2
mechanic/auto/heavyd       8581        2     1.0     1.0    91.2
carpenter                  8781        1      .5      .5    91.8
bus driver                 9171        1      .5      .5    92.3
taxi driver                9173        1      .5      .5    92.8
truck driver               9175        2     1.0     1.0    93.8
retired                    9700        3     1.5     1.5    95.4
student                    9800        8     3.9     4.1    99.5
labourer unspecified       9926        1      .5      .5   100.0
positive characteris       9996        2     1.0  MISSING
missing                    9999        9     4.4  MISSING
                                   -------  ------- -------
                          TOTAL      205   100.0   100.0
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APPENDIX H

HANDOUT FOR POTENTIAL SUBJECTS

Faculty of Nursing
University of Alberta
Edmonton, Alberta
________, 1989
Phone: ____________

Dear Sir:

Allow me to introduce myself. My name is Agnes Honish and I am a graduate student at the University of Alberta. To complete my work for a Master of Nursing Degree, I am doing a study of gay and bisexual men in Edmonton, Alberta. My study explores HIV status and sexual practices in gay and bisexual men.

In my career I have been employed in hospitals and public health units. My most recent job in public health was working in communicable disease control with the Edmonton Board of Health and the University of Alberta Hospital. As part of my university education, I talked to gay men who are HIV antibody positive. This experience has led to my interest to do research in the area of AIDS prevention.

I would like to ask you to take part in my study. You will be asked to answer a questionnaire that has some questions of a personal nature, including sexual practices. The questionnaire will take you about 30 minutes to answer. The questionnaire will not be marked with your name or any other code. Your name will not be known to me.

There is no risk to you. The questionnaire will only be used for the study. When my Master's thesis is completed I will destroy your questionnaire. My completed study will be placed in the University of Alberta library as my Master's thesis and a copy will be sent to the AIDS Network of Edmonton.

Answering all the questions is very important. It may help nurses understand the ways we can stop the spread of AIDS. Most questions do not have a right or wrong answer, but will say what you know and do. The results of this study may help protect the future health of you, your partners, friends, and the community.

Thank you for your helping with this study. Please mail the questionnaire to me in the self-addressed envelope. You may keep this letter.

Sincerely,

Agnes Honish
Graduate Student